

**UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
WACO DIVISION**

ROSEN TECHNOLOGIES LLC,

Plaintiff,

v.

RESIDEO TECHNOLOGIES, INC.

Defendant.

Case No. 6:22-cv-131

**COMPLAINT FOR PATENT  
INFRINGEMENT**

**JURY TRIAL DEMANDED**

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Rosen Technologies LLC (“Rosen” or “Plaintiff”) hereby asserts the following claims for patent infringement against Defendant Resideo Technologies, Inc. (“Resideo” or “Defendant”), and alleges as follows:

**SUMMARY**

1. Rosen owns by assignment all right, title and interest in numerous United States and foreign patents and applications including United States Patent Nos. 6,581,846; 6,619,555; 6,789,739; 7,156,318; 7,185,825; 7,232,075; and RE40,437 (“Asserted Patents”).

2. Defendant infringes the Asserted Patents by at least selling, without authorization, Rosen’s proprietary technologies in a number of its products including, *inter alia*, the VisionPro thermostats; the T10 Pro thermostat; the WiFi 9000 Color Touchscreen Thermostat, and other substantially similar products (collectively, the “Accused Products”). These Accused Products are marketed, offered, and distributed throughout the United States, including in this District.

3. By this action, Rosen seeks to obtain compensation for the harm it has suffered as a result of Defendant’s infringement of the Asserted Patents.

### **NATURE OF THE ACTION**

4. This is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*

5. Defendant has infringed and continues to infringe, and at least as early as the filing and/or service of this Complaint, has induced and continues to induce infringement of, and has contributed to and continues to contribute to infringement of, one or more claims of Rosen's Asserted Patents at least by making, using, selling, and/or offering to sell its products and services in the United States, including in this District, and/or by importing the Accused Products into the United States.

6. Rosen is the legal owner by assignment of the Asserted Patents, which were duly and legally issued by the United States Patent and Trademark Office ("USPTO"). Rosen seeks monetary damages for Defendant's infringement of the Asserted Patents.

### **THE PARTIES**

7. Plaintiff Rosen Technologies LLC is a Texas limited liability company with its principal place of business at 17330 Preston Road, Suite 200D, Dallas, Texas 75252. Rosen is the owner of intellectual property rights at issue in this action.

8. On information and belief, Defendant Resideo is a corporation organized under the laws of Delaware, with a regular established place of business at 901 E 6th St, Austin, TX 78702. Resideo may be served via its registered agent, Corporation Service Company, 251 Little Falls Drive, Wilmington, DE, 19808.

9. On information and belief, Defendant directly and/or indirectly develops, designs, manufactures, distributes, markets, offers to sell and/or sells infringing products and services in the United States, including in the Western District of Texas, and otherwise directs infringing

activities to this District in connection with its products and services.

### **JURISDICTION AND VENUE**

10. As this is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*, this Court has subject matter jurisdiction over the matters asserted herein under 28 U.S.C. §§ 1331 and 1338(a).

11. This Court has personal jurisdiction over Defendant, in part because Defendant does continuous and systematic business in this District, including by providing infringing products and services to the residents of the Western District of Texas that Defendant knew would be used within this District, and by soliciting business from the residents of the Western District of Texas. For example, Defendant is subject to personal jurisdiction in this Court because, *inter alia*, Defendant has a regular place of business in the district, and directly and through agents regularly does, solicits, and transacts business in the Western District of Texas.

12. In particular, Defendant has committed and continues to commit acts of infringement in violation of 35 U.S.C. § 271, and has made, used, marketed, distributed, offered for sale, sold, and/or imported infringing products in the State of Texas, and engaged in infringing conduct within and directed at or from this District. For example, Defendant has purposefully and voluntarily placed the Accused Products into the stream of commerce with the expectation that the Accused Products will be used in this District. The Accused Products have been and continue to be distributed to and used in this District. Defendant's acts cause and have caused injury to Rosen, including within this District.

13. Venue is proper in this District under the provisions of 28 U.S.C. § 1400(b) at least because Defendant has committed acts of infringement in this District and has a regular and established place of business in this District at 901 E 6th St, Austin, TX 78702.

### **PATENTS-IN-SUIT**

14. The Asserted Patents stem from inventions from Howard Rosen. Mr. Rosen has been a dedicated Inventor in the field of electronics for decades. In 1977, he created the first solid state radio frequency epilation equipment.

15. In 1982, Mr. Rosen developed many improvements to the home satellite TV market including the block-down frequency converter to allow for multiple receiver/program viewing from one satellite to a plurality of satellite home receivers.

16. In 1994, Mr. Rosen continued work in communications by inventing automatic caller-id phone number blocking which was represented by U.S. Patent No. 5,309,508 which was subsequently acquired by Motorola.

17. In 1998, among other things, Mr. Rosen developed computerized automatic telephone recorders as well as diagnostic tools for accessing the efficacy of the optic nerve after laser treatment. Mr. Rosen has been referred to many times at trade shows by many peers and companies including Honeywell (the former parent of Resideo) as a prolific inventor.

18. Around 1999, Mr. Rosen recognized a large void in the thermostat market and a definite need to make thermostats and their controls more user friendly. In or around 2000, he began filing patents on methods for making thermostats with touchscreens which were more intuitive and user friendly and he continued by additionally adding features which would turn out to help make homes more comfortable, efficient, and informative by acting on external stimulus. Further, the thermostats would incorporate more information and display important messages on a thermostat screen while maintaining the principle of user friendliness in working with virtual touchscreen thermostats which would subliminally teach a user how to control the HVAC system in a complex way without any burden on the user.

19. Mr. Rosen also invented night mode functionalities in thermostats, specifically in U.S. Patent No. 7,050,026. For example, claim 5 of the '026 Patent discloses a method for operating a dot matrix type liquid crystal digital display that is optionally backlit by a backlight for viewing by a user in a room where the liquid crystal digital display is located, where display elements of the liquid crystal digital display are driven by inputs from a programmable environmental control device for controlling environmental control equipment comprising: (a) one or more data items capable of being displayed on the display, where each data item consists of one or more image sections and each image section is substantially surrounded by a surrounding section; (b) occurrence of a first condition; (c) causing the image sections of one or more of the data items to be non-opaque and its surrounding sections to be partially or completely opaque; (d) occurrence of a second condition; and (e) causing the image sections of a data item to be partially or completely opaque and its surrounding sections to be non-opaque; and (f) the first condition is a first time of day and the second condition is a second time of day. The inventions in the '026 Patent has been widely adopted and claim 5 is infringed by a number of products currently on the market.

20. Furthermore, Mr. Rosen developed thermostats that could change their user interface to adapt to the HVAC systems specifically in a particular equipment environment. AED Electronics Inc., owned by Mr. Rosen, set out to make headways into the HVAC market at the turn of the century.

21. AED Electronics thermostats were beginning to be produced by AED Electronics and were marketed under the OEM names of Carrier Corporation such as "Totaline" as well as private labeling for other companies. Most of the AED products included dot matrix liquid crystal displays similar to the way today's LCD television screen work with dots and the ability to have a

virtual touchscreen thermostat allowed thermostat screen greatly improved user interface which could even include changes in contrast and look to accommodate for décor and dark rooms. The list of improvements in the thermostat field that developed by Mr. Rosen, were vast and covered multiple options for user screens including but not limited to making buttons that were only necessary to the user appear on each individual thermostat thus eliminating unused buttons which was the old conventional way of developing thermostats.

22. In 2004, Mr. Rosen developed a remote wireless device that included a temperature sensor and an occupancy sensor that could be placed in many rooms in a building or home so that a thermostat would control temperature more accurately in occupied rooms in commercial buildings or homes.

23. At that point, Mr. Rosen created a company, Verdant Environmental Technologies, which used various methods to wirelessly control large building energy consumption and reduce electrical and fossil fuel demand by as much as 48%. The results were more successful than anyone dreamed of and as a result within approximately 8 years the company was sold to a large multinational group and evolved into products today manufactured as a subsidiary under Emerson Electric.

24. Mr. Rosen's contributions to the technology now incorporated into today's HVAC systems are immeasurable.

**U.S. Patent No. 6,581,846**

25. U.S. Patent No. 6,581,846 ("the '846 Patent") is entitled "Thermostat Including a Vacation Mode in Which Electrical Devices Within And Proximate The Conditioned Space Are Operated By the Thermostat To Provide An Occupied Appearance," and was issued on June 24, 2003. A true and correct copy of the '846 Patent is attached as Exhibit A.

26. The '846 Patent was filed on March 6, 2002, as U.S. Patent Application No. 10/091,757.

27. Rosen is the owner of all rights, title, and interest in and to the '846 Patent, with the full and exclusive right to bring suit to enforce the '846 Patent, including the right to recover for past infringement.

28. The '846 Patent is valid and enforceable under United States Patent Laws.

29. The '846 Patent recognized several problems with existing thermostats with a “vacation” mode of operation, wherein third parties may notice that the homeowner is away from the residence. Exhibit A at 1:11-20.

30. To address one or more shortcomings of these existing microcontrollers, the '836 Patent discloses the ability for the thermostat “when operating in ‘vacation’ mode, issues commands to various devices situated in and around the conditioned space to provide an appearance of ongoing occupancy.” *Id.* at 1:15-20. This is performed by the system “issu[ing]” a pattern of actuate and deactuate commands to the addressable electrical devices to provide the illusion of ongoing occupancy.” *Id.*, 2:18-22

**U.S. Patent No. 6,619,555**

31. U.S. Patent No. 6,619,555 (“the '555 Patent”) is entitled “Thermostat System Communicating with a Remote Correspondent for Receiving And Displaying Diverse Information,” and was issued on September 16, 2003. A true and correct copy of the '555 Patent is attached as Exhibit B.

32. The '555 Patent was filed on February 13, 2002, as U.S. Patent Application No. 10/075,886.

33. Rosen is the owner of all rights, title, and interest in and to the '555 Patent, with the

full and exclusive right to bring suit to enforce the '555 Patent, including the right to recover for past infringement.

34. The '555 Patent is valid and enforceable under United States Patent Laws.

35. The '555 Patent recognized several problems with existing programmable and non-programmable thermostat systems. Exhibit B at 1:48-64. Specifically, in the prior art, “thermostat systems are [either] programmable by a user” or “may limit, or even make no provision for, user programming... [such as] thermostats distributed throughout a large commercial establishment.” *Id.*

36. To address one or more shortcomings of these existing thermostats, the '555 Patent discloses, *inter alia*, a “thermostat system incorporating a communication interface for receiving and displaying diverse information from a remote correspondent.” *Id.* at 1:8-10.

**U.S. Patent No. 6,789,739**

37. U.S. Patent No. 6,789,739 (“the '739 Patent”) is entitled “Thermostat System with Location Data,” and was issued on September 14, 2004. A true and correct copy of the '739 Patent is attached as Exhibit C.

38. The '739 Patent was filed on November 4, 2002, as U.S. Patent Application No. 10/287,677.

39. Rosen is the owner of all rights, title, and interest in and to the '739 Patent, with the full and exclusive right to bring suit to enforce the '739 Patent, including the right to recover for past infringement.

40. The '739 Patent is valid and enforceable under United States Patent Laws.

41. The '739 Patent recognized several problems with existing thermostat systems. Exhibit C at 1:48-64. Specifically, in the prior art solution, “thermostat systems are [either]



programmable by a user” or “may limit, or even make no provision for, user programming... [such as] thermostats distributed throughout a large commercial establishment.” *Id.*

42. To address one or more shortcomings of these existing thermostats, the ’739 Patent discloses, *inter alia*, a “thermostat system incorporating a communication interface for receiving and displaying diverse information from a remote correspondent.” *Id.* at 1:9-11.

**U.S. Patent No. 7,156,318**

43. U.S. Patent No. 7,156,318 (“the ’318 Patent”) is entitled “Programmable Thermostat Incorporating a Liquid Crystal Display Selectively Presenting Adaptable System Menus Including Changeable Interactive Virtual Buttons,” and was issued on January 2, 2007. A true and correct copy of the ’318 Patent is attached as Exhibit D.

44. The ’318 Patent was filed on September 3, 2003, as U.S. Patent Application No. 10/654,235.

45. Rosen is the owner of all rights, title, and interest in and to the ’318 Patent, with the full and exclusive right to bring suit to enforce the ’318 Patent, including the right to recover for past infringement.

46. The ’318 Patent is valid and enforceable under United States Patent Laws.

47. The ’318 Patent recognized several problems with existing programmable thermostats. Exhibit D at 1:65-2:9. Specifically, in the prior art solution, “[t]here is a fundamental problem with the prior art programmable thermostat systems: they are difficult to program to the extent that some users are unable to successfully program them. This is because the user interfaces which have been employed in prior art programmable interfaces are not highly intuitive.” *Id.* at 2:10-15. Furthermore, the prior art relied on “fixed position real or virtual buttons, at least some of which have multi-functions depending upon the point which a user has reached in the

programming process.” *Id.* at 2:15-20.

48. To address one or more shortcomings of these existing thermostats, the ’318 Patent discloses, *inter alia*, “a field programmable thermostat which may be user-configured to limit functionality only as necessary for the specific conditioned space for which the program is being established.” *Id.* at 3:1-5.

**U.S. Patent No. 7,185,825**

49. U.S. Patent No. 7,185,825 (“the ’825 Patent”) is entitled “Programmable Thermostat Employing a Fail Safe Real Time Clock,” and was issued on March 6, 2007. A true and correct copy of the ’825 Patent is attached as Exhibit E.

50. The ’825 Patent was filed on June 24, 2004, as U.S. Patent Application No. 10/875,579.

51. Rosen is the owner of all rights, title, and interest in and to the ’825 Patent, with the full and exclusive right to bring suit to enforce the ’825 Patent, including the right to recover for past infringement.

52. The ’825 Patent is valid and enforceable under United States Patent Laws.

53. The ’825 Patent recognized several problems with existing thermostat systems. Exhibit E at 2:10-55. Specifically, in the prior art, “power to a programmable thermostat is supplied from the controlled space conditioning equipment, and either a battery or very high capacity capacitor ('super-cap') provides backup power to 'ride out' equipment power failure ('outage') until power is restored” *Id.* at 2:18-22. Furthermore, “[b]atteries must be changed at intervals to ensure that the thermostat will continue to hold its time and setting throughout an outage.” *Id.* at 2:22-25.

54. To address one or more shortcomings of these existing thermostats, the ’825 Patent discloses, *inter alia*, a “a fail safe real time clock in a programmable clock, particularly a

thermostat incorporating a vacation mode of operation.” *Id.* at 2:56-59.

**U.S. Patent No. 7,232,075**

55. U.S. Patent No. 7,232,075 (“the ’075 Patent”) is entitled “Thermostat System with Touchscreen With User Interfaces Or Operational Algorithms Via A Remote Correspondent” and was issued on June 19, 2007. A true and correct copy of the ’075 Patent is attached as Exhibit F.

56. The ’075 Patent was filed on January 19, 2005, as U.S. Patent Application No. 11/039,180.

57. Rosen is the owner of all rights, title, and interest in and to the ’075 Patent, with the full and exclusive right to bring suit to enforce the ’075 Patent, including the right to recover for past infringement.

58. The ’075 Patent is valid and enforceable under United States Patent Laws.

59. The ’075 Patent recognized several problems with existing thermostat systems. Exhibit F at 1:34-3:4. Specifically, in the prior art “information or operational interfaces of programmable thermostats can be incomprehensible or overly challenging to many users with advanced age, learning skills, poor vision and others in similar circumstances.” *Id.* at 2:27-30. In the prior art, “user interface that use a mixture of raised push buttons with representations of environmental sensor information and control data on a segmented liquid crystal display.” *Id.* at 2:35-38. The ’075 Patent provides a solution to the prior art problems where “thermostat systems are [either] programmable by a user” or “may limit, or even make no provision for, user programming... [such as] thermostats distributed throughout a large commercial establishment.” *Id.*

60. To address one or more shortcomings of these existing thermostats, the ’075 Patent discloses, *inter alia*, a thermostat “whose user interface can be easily changed after installation to

accommodate equipment or control options not anticipated at installation or to change the user interface to a form not possible with a control program originally installed with the thermostat.”

*Id.* at 3:5-10.

**U.S. Patent No. RE40,437**

61. U.S. Patent No. RE40,437 (“the ’437 Patent”) is entitled “Thermostat System with Remote Data Averaging” and was reissued on July 15, 2008. A true and correct copy of the ’437 Patent is attached as Exhibit G.

62. The ’437 Patent is a reissue of U.S. Patent No. 7,058,477. U.S. Patent No. 7,058,477 was filed on November 23, 2004, as U.S. Patent Application No. 10/995,574. The reissue was filed May 16, 2007, as U.S. Application No. 11/804,324.

63. Rosen is the owner of all rights, title, and interest in and to the ’437 Patent, with the full and exclusive right to bring suit to enforce the ’437 Patent, including the right to recover for past infringement.

64. The ’437 Patent is valid and enforceable under United States Patent Laws.

65. The ’437 Patent recognized several problems with existing thermostat systems. Exhibit G, 1:45-2:13. Specifically, in the prior art, “thermostat systems also may act to control temperature in Some rooms of out of all those in a conditioned space as a "Zone". Unfortunately, Zone control requires dedicated equipment for the Zone or duct dampers or deflectors to direct conditioned air to the Zone rooms.” *Id.* at 1:65-2:2. Additionally, “the control value established by prior art thermostat systems can easily over or under-condition a room where a user most desires environmental control.” *Id.* at 2:8-13.

66. To address one or more shortcomings of these existing thermostats, the ’437 Patent discloses, *inter alia*, a “thermostat system where remote sensor values are averaged for occupied

rooms at a central control device.” *Id.* at 2:14-16. “The averaged sensor data establish a Zone control value [and] [t]his Zone control value more accurately reflects environmental conditions of rooms where the user most desires control of those environmental conditions.” *Id.* at 2:16-19.

### **COUNT I: INFRINGEMENT OF U.S. PATENT NO. 6,581,846**

67. Rosen incorporates by reference and re-alleges paragraphs 1-66 of this Complaint as if fully set forth herein.

68. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the ’846 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, the VisionPro thermostats, and other substantially similar products (“’846 Accused Products”)

69. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of Claim 1 of the ’846 Patent in connection with the ’846 Accused Products. This description is based on publicly available information. Rosen reserves the right to modify this description, including, for example, on the basis of information about the ’846 Accused Products that it obtains during discovery.

*1) thermostat system for controlling space conditioning equipment comprising:* - For instance, the ’846 Accused Product is a thermostat system.

### **RedLINK™ VisionPRO<sup>™</sup> Programmable Light Commercial Thermostat FOR MULTISTAGE CONVENTIONAL AND HEAT PUMP SYSTEMS**

RedLINK VisionPRO is a 7 day programmable thermostat with auto changeover that is designed for single stage and multistage control of conventional and heat pump equipment such as rooftop units and split systems. RedLINK VisionPRO can be used with or without an equipment interface module. The thermostat and equipment interface Module communicate using RedLINK wireless technology. The thermostat controls up to 3 heat / 4 cool conventional systems and up to 4 heat / 2 cool heat pump systems. The thermostat controls humidification, dehumidification, ventilation, an economizer and a lighting panel. Sensor inputs are used with remote indoor air temperature sensor(s), an outdoor air temperature sensor, a discharge air temperature sensor, a return air temperature sensor, an occupancy sensor for remote setback and dry contact devices for displaying alerts.

*1A) a temperature sensor for providing an electrical signal indicative of the temperature of a conditioned space in which the temperature sensor is situated;* — For instance, the '846 Accused Product comes with a built-in temperature sensor, which senses the temperature around and sends a signal indicative of the temperature to the processor of thermostat..

## **VisionPRO<sup>®</sup> 8000 with RedLINK<sup>™</sup>**

### **Indoor Sensor Operation**

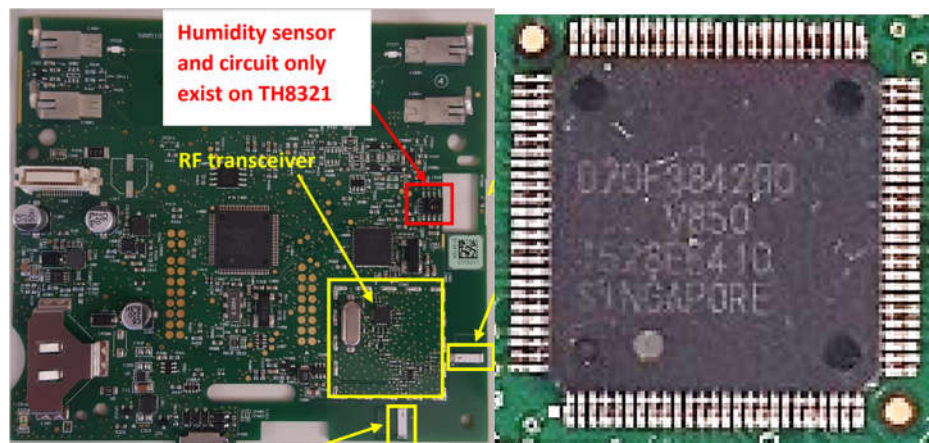
#### **Temperature Control**

The thermostat can be set to respond to its internal temperature sensor, or to an optional remote indoor sensor. If multiple sensors are used, the thermostat will average the temperature detected at each sensor.

In Fig. 305, both the thermostat internal sensor and remote indoor sensor are being used for Temperature Control and are being averaged since both sensors are set to "Yes." Select "No" if you do NOT want a specific sensor to be used for temperature control or be part of the temperature average.

*1(B): a processor, said processor including:* — For instance, the '846 Accused Products includes a processor; further including.

*1(B)1): a central processing unit;* —For instance, the '846 Accused Products includes a central processing unit.







**Manufacturer:** Renesas Electronics

**Product Category:** Microcontrollers, 32 Bit Microcontrollers

**Avnet Manufacturer Part #:** UPD70F3842GC-UEU-AX

***1(B)2): a memory coupled to said central processing unit for storing program and data information; and;*** — For instance, the '846 Accused Products includes a memory coupled to the CPU.

- Memory space: 64 MB of linear address space (for programs and data)
  - External expansion: Up to 16 MB (including 1 MB used as internal ROM/RAM)
  - Internal memory: RAM: 8/16/32/40 /80 KB
  - Flash memory: 128 K/256 K/384 K/512 K/768 K/1 MB
  - External bus interface: Separate bus/multiplexed bus output selectable(□ PD70F3737, 70F3738,70F3792, 70F3793)
  - Multiplexed bus mode (PD70F3841, 70F3842)

***1(B)3): an input/output unit including -*** For instance, the '846 Accused Products includes a D70F3842GC processor from Renesas and includes I/O ports for information transmission and reception.



**Manufacturer:** Renesas Electronics

**Product Category:** Microcontrollers, 32 Bit Microcontrollers

**Avnet Manufacturer Part #:** UPD70F3842GC-UEU-AX

- Ports: I/O ports: 84 (μPD70F3737, 70F3738)
  - 83 (μPD70F3792, 70F3793, 70F3841, 70F3842)

***1(B)3)a): a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom-*** For instance, the '846 Accused Products includes a built-in temperature sensor, which senses the temperature around and sends a signal indicative of the temperature to the processor of thermostat. Also, it receives temperatures from different remote sensors and from its built-in sensor.

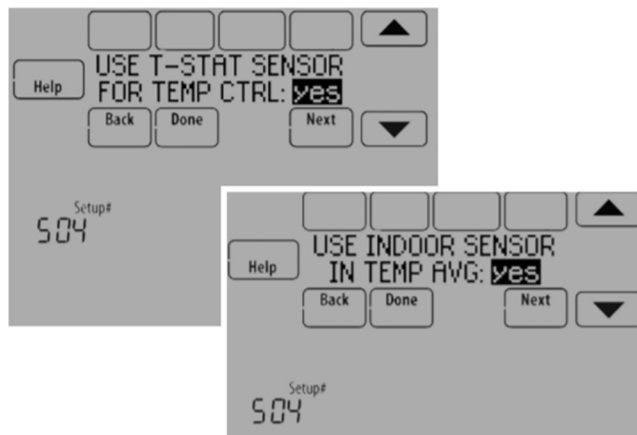
**VisionPRO<sup>®</sup> 8000 with RedLINK<sup>™</sup>**

## Indoor Sensor Operation

### Temperature Control

The thermostat can be set to respond to its internal temperature sensor, or to an optional remote indoor sensor. If multiple sensors are used, the thermostat will average the temperature detected at each sensor.

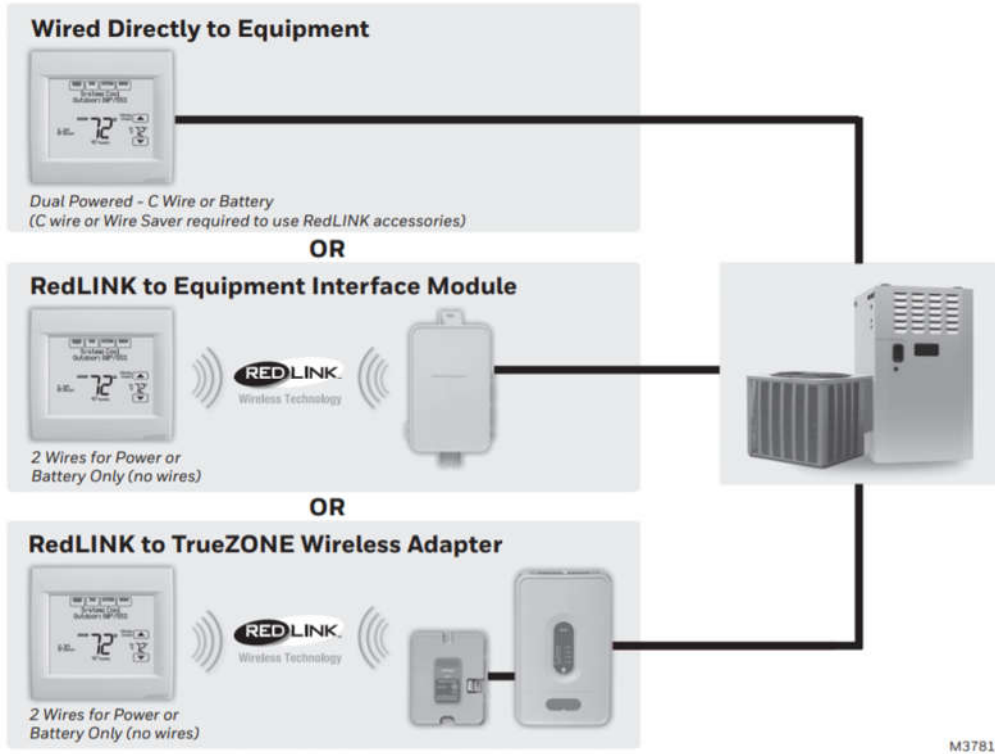
In Fig. 305, both the thermostat internal sensor and remote indoor sensor are being used for Temperature Control and are being averaged since both sensors are set to "Yes." Select "No" if you do NOT want a specific sensor to be used for temperature control or be part of the temperature average.



***1(B)3)b): a control output coupled to the space conditioning equipment for issuing control signals thereto; and-*** For instance, the '846 Accused Products connects to multiple heating/cooling devices such as AC, FAN and humidifier (control output). These connections help the thermostat to control these devices by sending control signal over these connections.

RedLINK VisionPRO is a 7 day programmable thermostat with auto changeover that is designed for single stage and multistage control of conventional and heat pump equipment such as rooftop units and split systems. RedLINK VisionPRO can be used with or without an equipment interface module. The thermostat and equipment interface Module communicate using RedLINK wireless technology. The thermostat controls up to 3 heat / 4 cool conventional systems and up to 4 heat / 2 cool heat pump systems. The thermostat controls humidification, dehumidification, ventilation, an economizer and a lighting panel. Sensor inputs are used with remote indoor air temperature sensor(s), an outdoor air temperature sensor, a discharge air temperature sensor, a return air temperature sensor, an occupancy sensor for remote setback and dry contact devices for displaying alerts.





*1(B)3)c): an electrical device interface adapted to establish communications between said processor and a plurality of addressable electrical devices for selective actuation and deactuation thereof; said addressable electrical devices being situated within and proximate said conditioned space; and-* For instance, the '846 Accused Products connects to multiple heating/cooling devices such as AC, FAN and humidifier/dehumidifier.

## SPECIFICATIONS

### Terminal Designations:

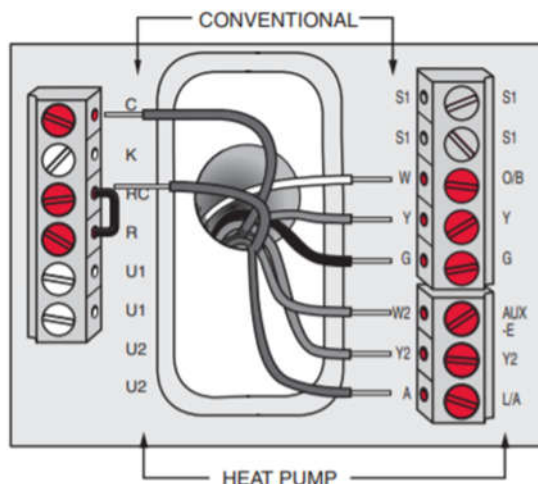
Equipment Interface Module: R, RC, RH, C, W-O/B, W2-AUX 1, W3-AUX 2, Y, Y2, G, A-L/A, U1 U1, U2 U2, U3 U3, S1 S1, S2 S2, S3 S3, S4 S4, A, B, C, D  
 TH8321R Thermostat: R, RC, C, W-O/B, W2-AUX/E, Y, Y2, G, A-L/A, K, U1 U1, S1 S1

TH8320R Thermostat: R, RC, C, W-O/B, W2-AUX/E, Y, Y2, G, A-L/A, K, S1 S1

TH8110R Thermostat: R, RC, C, W-O/B, Y, G, K, S1 S1

### Electrical Ratings (for VisionPRO and Equipment Interface Module):

Terminal	Voltage (50/60Hz)	Max. Current Rating
W - O/B	18 to 30 VAC and 750 mVDC	1.00A
Y (cooling)	18 to 30 VAC	1.00A
G (fan)	18 to 30 VAC	0.50A
W2 - Aux 1 (heating)	18 to 30 VAC	0.60A
W3 - Aux 2 (heating)	18 to 30 VAC	0.60A
Y2 (Cooling)	18 to 30 VAC	0.60A
A-LA (Output)	18 to 30 VAC	1.00A
(U1, U1), (U2, U2), (U3, U3)	30 VAC max.	0.50A



**Fig. 19. Thermostat wired directly to equipment.**

## Dehumidification

The thermostat shall control to the desired dehumidification level using one of the methods below:

Control dehumidification using a dehumidifier.

Control dehumidification by over cooling and lowering the fan speed.

Control dehumidification using reheat.

## Heating

The thermostat shall control the heating output based on the demand signal communicated from the thermostat program, taking into account both space temperature deviation (proportional gain) and the duration of that temperature deviation (integral gain).

The thermostat shall energize heating equipment when space temperature falls below the heating setpoint.

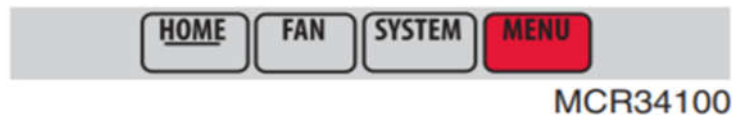
The thermostat shall have a compressor outdoor lockout and backup heat outdoor lockout to turn off the heat pump or backup heat based on outdoor temperature. When the backup heat droop is set to Comfort, the control algorithm will use backup heat as needed to maintain the setpoint within +/- 1 F. When the backup heat droop is set to 2 F or higher and the backup heat upstage timer is turned on, the indoor temperature must drop to the backup heat droop setting or the backup heat upstage timer must expire before turning on the backup heat.

*1(C): a program stored in said memory for causing said central processing unit to selectively:-* For instance, the '846 Accused Products includes built-in vacation mode feature (stored program), which user can configure.

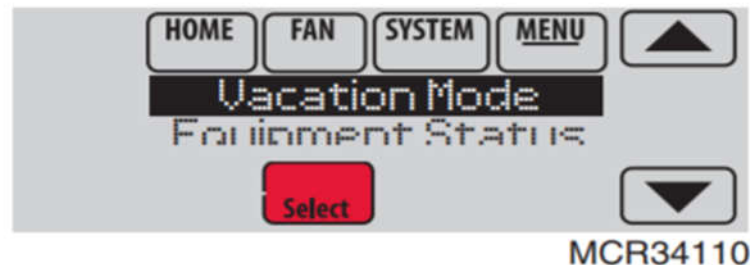
## Setting Vacation Hold: Residential Use

This feature helps you save energy while you are away, and restores comfortable settings just before you return home.

1. Touch MENU.



2. Select Vacation Mode.



- Vacation and holiday schedule—allowing you to program a setback temperature to save energy while you are away.

*1(C)1): place said thermostat system into a “vacation” mode; and:-* For instance, the '846 Accused Products includes a vacation mode.

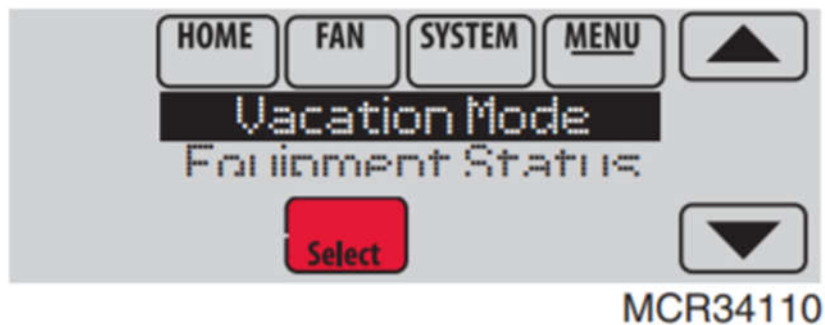
*1(C)2): if said thermostat system is in said “vacation” mode, periodically actuate and*

*deactuate predetermined ones of said addressable electrical devices in a predetermined pattern:-*

For instance, in the '846 Accused Products, a user can set the vacation mode by providing a date and a target heat and cool temp. At the configured time, it automatically changes the mode of thermostat and starts sending commands to electrical devices such as heating/cooling equipment as per the vacation profile configuration to maintain the temperature of the room without user intervention.

## Setting Vacation Hold: Residential Use

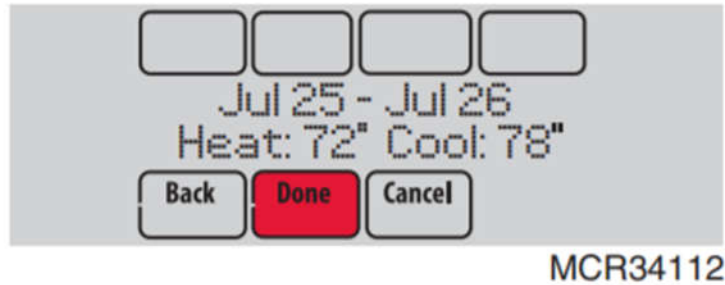
### 2. Select Vacation Mode.



### 3. Touch ▲ or ▼ to select the date you leave, then touch Next for further scheduling details, including times of day, temperature settings, return date, and return settings.



4. Review your selections on the last display, and touch Done to save your settings. Touch Cancel to ignore the changes.



### Heating and Cooling Schedule

Initiation of heating setback or cooling setup for each of 7 days shall be provided by a programmed time schedule manually entered into the thermostat. The thermostat shall provide two occupied and two unoccupied periods per day. When all or a portion of a manually programmed schedule is unavailable, the thermostat shall control to the default program schedule.

The thermostat shall provide adjustable recovery ramps for heating and cooling. The thermostat will begin heating or cooling recovery early to ensure that the temperature is reached at the scheduled time.

The thermostat requires the current time to be set to follow the user's desired program schedule. The thermostat will automatically update the current time for Day Light Saving time if this option is turned on.

70. At least as early as of the date of the filing of the Complaint, Defendant has had actual knowledge of the '846 Patent.

71. Additionally, Defendant contributorily infringes at least one or more claims of the '846 Patent by providing the '846 Accused Products and/or software components thereof, that embody a material part of the claimed inventions of the '846 Patent, that are known by Defendant to be specially made or adapted for use in an infringing manner and are not staple articles with substantial non-infringing uses. The '846 Accused Products are specially designed to infringe at least one or more claims of the '846 Patent, and their accused components have no substantial non-infringing uses. In particular, on information and belief, the software modules and code that implement and perform the infringing functionalities identified above are specially made and adapted to carry out said functionality and do not have any substantial non-infringing uses.

72. At least as early as the filing and/or service of this Complaint, Defendant's infringement of the '846 Patent was and continues to be willful and deliberate, entitling Rosen to



enhanced damages.

73. Additional allegations regarding Defendant's knowledge of the '846 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

74. Defendant's infringement of the '846 Patent is exceptional and entitles Rosen to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

75. Rosen is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '846 Patent.

76. Rosen is entitled to recover from Defendant all damages that Rosen has sustained as a result of Defendant's infringement of the '846 Patent, including, without limitation, a reasonable royalty.

## **COUNT II: INFRINGEMENT OF U.S. PATENT NO. 6,619,555**

77. Rosen incorporates by reference and re-alleges paragraphs 1-76 of this Complaint as if fully set forth herein.

78. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the '555 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, the T10 Pro Smart Thermostat, and other substantially similar products (the "'555 Accused Products").

79. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of Claim 18 of the '555 Patent in connection with the '555 Accused Products. This description is based on publicly available information. Rosen reserves the right to modify this description, including, for example, on the basis of information

about the '555 Accused Products that it obtains during discovery.

**18) thermostat system for controlling space conditioning equipment comprising:** - For instance, the '555 Accused Product is a thermostat system.



The T10 Pro Smart Thermostat works with Smart Room Sensors to help you adjust the temperature and humidity from anywhere and stay cozy in the rooms that matter.

Place sensors where you want to see each room's temperature and humidity. Use the multi-room display on the thermostat's touchscreen — or in the Honeywell Home app — to focus on rooms based on occupancy or a specific schedule you choose. When focusing on multiple rooms, the T10 works toward creating an average temperature, balancing the needs across the whole home.

### Dehumidification

The thermostat reads the indoor humidity level and allows the user to set a dehumidification setting. The thermostat controls the humidity level using the cooling system or a whole house dehumidifier.

**18(A) a temperature sensor for providing an electrical signal indicative of the temperature of a conditioned space in which the temperature sensor is situated;**— For instance, the '555 Accused Product includes temperature sensors for detecting temperature in the installed location. The sensor further sends the corresponding temperature value to the thermostat.

## 2-PACK T10 REDLINK® ROOM SENSOR

C7189R2002-2/U

Powerful Sensors. Whole-Home Comfort.

The RedLINK® Room Sensors work with the Honeywell Home T10 Smart Thermostat. The sensors have a 200-foot range that detects indoor temperature, humidity and motion and transmit back to the thermostat to deliver reliable, whole-home comfort.

The T10 Pro Smart Thermostat works with Smart Room Sensors to help you adjust the temperature and humidity from anywhere and stay cozy in the rooms that matter.

Place sensors where you want to see each room's temperature and humidity. Use the multi-room display on the thermostat's touchscreen — or in the Honeywell Home app — to focus on rooms based on occupancy or a specific schedule you choose. When focusing on multiple rooms, the T10 works toward creating an average temperature, balancing the needs across the whole home.

The T10 Pro Smart Thermostat with RedLINK™ Room Sensor helps prioritize the temperature of multiple rooms, creating a more comfortable home for you and your family. With a sensor in the rooms that matter most, like the kitchen, living room and bedrooms, you can experience truly smart comfort control.

***18(B): a liquid crystal display for selectively displaying an alphanumeric message;*** - For instance, the '555 Accused Products include an LCD touchscreen that displays various options, including temperature, to a user.

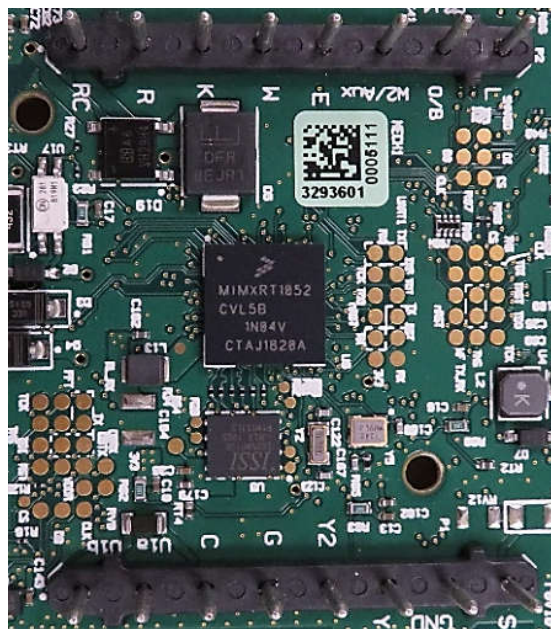




**T10 Pro Smart Thermostat with RedLINK™ Room Sensor**

- Graphical LCD color touchscreen with multi-room display

*1(C): processor, said processor including;*— For instance, the '555 Accused Products includes a processor; further including.



*1(C)1: a central processing unit;*—For instance, the '555 Accused Products includes a

central processing unit.



***1(C)2): a real time clock;***—For instance, the '555 Accused Products includes a processor having a real time clock.

***1(C)3): a memory coupled to said central processing unit for storing program and data information; and;***— For instance, the '555 Accused Products includes a memory coupled to the CPU.

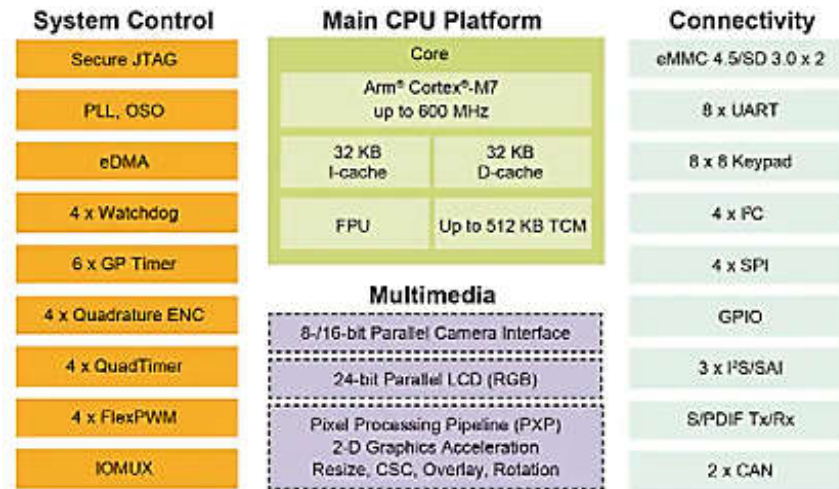
## MIMXRT1052CVL5B

### Operating Features

Parameter	Value
Core: Number of cores (SPEC)	1
Core Type	Arm Cortex-M7
Operating Frequency [Max] (MHz)	528
SRAM (kB)	512

***1(C)4): an input/output unit including -*** For instance, the '555 Accused Products includes a processor in the thermostat is having I/O modules. The I/O modules are coupled with the

processor.



**1(C)4)a): a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom-** For instance, the '555 Accused Products includes a built-in temperature sensor, which senses the temperature around and sends a signal indicative of the temperature to the processor of thermostat. Also, it receives temperatures from different remote sensors and from its built-in sensor. This received temperature is displayed on the thermostat's LCD display

## 2-PACK T10 REDLINK® ROOM SENSOR

C7189R2002-2/U

Powerful Sensors. Whole-Home Comfort.

The RedLINK® Room Sensors work with the Honeywell Home T10 Smart Thermostat. The sensors have a 200-foot range that detects indoor temperature, humidity and motion and transmit back to the thermostat to deliver reliable, whole-home comfort.



### Selecting sensors

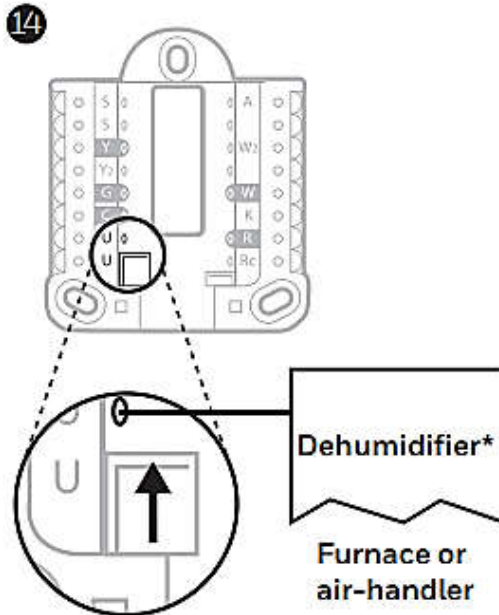
The temperature reading displayed on the home screen is from the sensor or sensors that are being used for temperature control. You can change which sensors are being used for control by selecting menu-priority. From the home screen, touch the menu icon at the bottom of the display and select "Priority".

*1(C)4b): a control output coupled to the space conditioning equipment for issuing control signals thereto; and-* For instance, the '555 Accused Products connects to the heating or cooling systems based on heating or cooling calls (signals) generating from the output present in the thermostat.

### Dehumidification

The thermostat reads the indoor humidity level and allows the user to set a dehumidification setting. The thermostat controls the humidity level using the cooling system or a whole house dehumidifier.

Wired to low speed fan terminal on HVAC for dehumidification



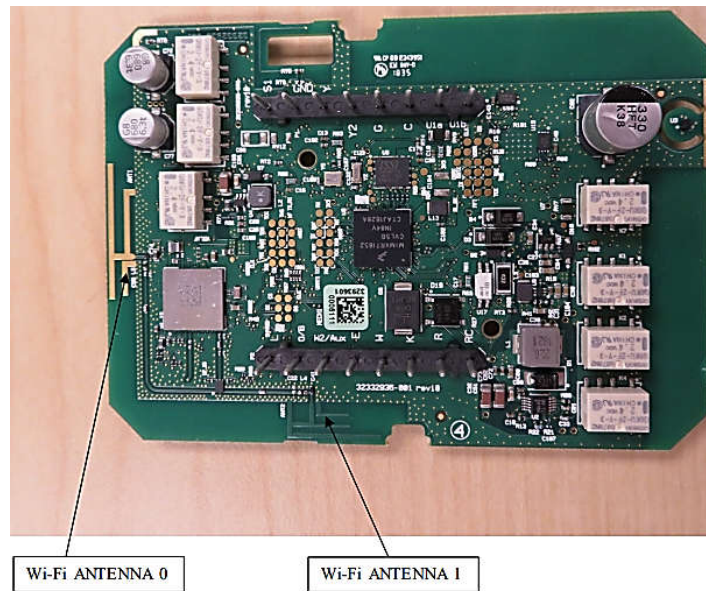
\* Label for this terminal varies by equipment



### Common Controller Applications

Temperature controllers in industry work much the same way they do in common household applications. A basic temperature controller provides control of industrial or laboratory heating and cooling processes. In a typical application, sensors measure the actual temperature. This sensed temperature is constantly compared to a user setpoint. When the actual temperature deviates from the setpoint, the controller generates an output signal to activate other temperature regulating devices such as heating elements or refrigeration components to bring the temperature back to the setpoint.

*1(C)4)c): a communications interface adapted to establish bi-directional communications between said processor and a first remote correspondent which is a source of current information; and-* For instance, the '555 Accused Products includes an interface to connect to the internet using Wi-Fi for receiving weather information from the internet.

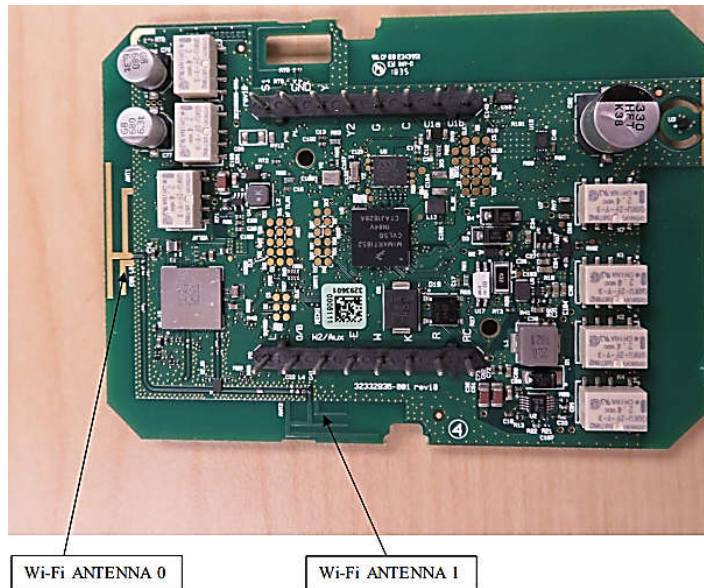


8050	Humidification Window Protection	<ul style="list-style-type: none"> <li>Off</li> <li>On</li> </ul>	Off	<p>Requires either wired outdoor sensor or Internet weather (thermostat connected to Wi-Fi and registered to the app).</p> <p>Off: The thermostat controls the humidity level to the user's desired humidity setting. Frost or condensation may appear on windows.</p> <p>On: The thermostat prevents frost or condensation on windows by not allowing the humidity to go above the "Window Limit" when it is controlling the humidifier. The "Window Limit" is based on the current outdoor temperature and the user's window protection setting. The "Window Limit" is displayed on the user's humidification screen. See "Window Protection" on page 35.</p>
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## WHAT EXTRA FEATURES DO I GET BY CONNECTING TO WIFI AND REGISTERING MY RTH6500WF SMART SERIES PROGRAMMABLE THERMOSTAT?

Outdoor Weather / Forecast: Display current outdoor weather (based on zip code related to accuweather) and display 5-day forecast

***1(D): means coupling said communications interface and said first remote correspondent; and:-*** For instance, the '555 Accused Products includes an antenna for connecting to the internet.



***1(E): a program stored in said memory for displaying messages received from said first remote correspondent, which received messages do not pertain to the operation of said thermostat system, on said liquid crystal display:-*** For instance, the '555 Accused Products includes a humidification window protection program that uses the weather information received from the internet (first remote correspondent). In general, Honeywell thermostats use Accuweather for fetching weather information. The thermostat also displays weather data on the LCD touchscreen.



8050	Humidification Window Protection	<ul style="list-style-type: none"> <li>• Off</li> <li>• On</li> </ul>	Off	<p>Requires either wired outdoor sensor or Internet weather (thermostat connected to Wi-Fi and registered to the app).</p> <p>Off: The thermostat controls the humidity level to the user's desired humidity setting. Frost or condensation may appear on windows.</p> <p>On: The thermostat prevents frost or condensation on windows by not allowing the humidity to go above the "Window Limit" when it is controlling the humidifier. The "Window Limit" is based on the current outdoor temperature and the user's window protection setting. The "Window Limit" is displayed on the user's humidification screen. See "Window Protection" on page 35.</p>
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80. At least as early as of the date of the filing of the Complaint, Defendant has had actual knowledge of the '555 Patent.

81. Additionally, Defendant contributorily infringes at least one or more claims of the '555 Patent by providing the '555 Accused Products and/or software components thereof, that embody a material part of the claimed inventions of the '555 Patent, that are known by Defendant to be specially made or adapted for use in an infringing manner and are not staple articles with substantial non-infringing uses. The '555 Accused Products are specially designed to infringe at least one or more claims of the '555 Patent, and their accused components have no substantial non-infringing uses. In particular, on information and belief, the software modules and code that

implement and perform the infringing functionalities identified above are specially made and adapted to carry out said functionality and do not have any substantial non-infringing uses.

82. At least as early as the filing and/or service of this Complaint, Defendant's infringement of the '555 Patent was and continues to be willful and deliberate, entitling Rosen to enhanced damages.

83. Additional allegations regarding Defendant's knowledge of the '555 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

84. Defendant's infringement of the '555 Patent is exceptional and entitles Rosen to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

85. Rosen is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '555 Patent.

86. Rosen is entitled to recover from Defendant all damages that Rosen has sustained as a result of Defendant's infringement of the '555 Patent, including, without limitation, a reasonable royalty.

### **COUNT III: INFRINGEMENT OF U.S. PATENT NO. 6,789,739**

87. Rosen incorporates by reference and re-alleges paragraphs 1-86 of this Complaint as if fully set forth herein

88. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the '739 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, among other things, the WiFi 9000 Color Touchscreen Thermostat, and other substantially similar products ("the '739 Accused Products").



89. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of Claim 1 of the '739 Patent in connection with the '739 Accused Products. This description is based on publicly available information. Rosen reserves the right to modify this description, including, for example, on the basis of information about the '739 Accused Products that it obtains during discovery

***1.: A location response system with an environmental controller located at a single physical location adapted to be an integral part of a system of environmental sensing or control for a local and substantially enclosed space comprising:*** - For instance, the '739 Accused Product is a thermostat system which can change settings, set temperature schedules, and save energy, among other things. The thermostat system provides information related to the indoor and outdoor environments of their home and display the local weather information based on postal /zip code of an area.

**Honeywell Home**

WIFI 9000 COLOR TOUCHSCREEN THERMOSTAT



Home Comfort You Can Count On

Get the full picture of the indoor and outdoor environments of your smart home. The high-definition display on the WiFi 9000 Color Touchscreen Thermostat shows both indoor and outdoor temperatures, as well as humidity. So you can stay comfortable inside your home no matter the weather outside.

**Weather / Forecast:**

When connected to Wi-Fi and registered on mytotalconnectcomfort.com, the thermostat can display the outdoor weather temperature and 8-hour forecast for your area (based on zip code).

From the thermostat idle screen (touch the main display to toggle between the Active and Idle main screens), touch the weather icon at the bottom center.

***1(A) a physical location of the environmental controller stored as location data in storage means in the controller;***— For instance, the '739 Accused Product display the local weather information based on postal/zip code of an area. The address/zip code is saved by the thermostat to show weather forecast for that area based on that zip code.

**System Setup Options (MENU > System Setup)**

Screen Title	Settings and Options
Language	English/Français/Español.
Thermostat installed in	Home(Thermostat is used in a residential (default).
Your thermostat location	Touch <b>THERMOSTAT</b> button to display a screen where you can enter a custom name using a keypad. If you have only one thermostat, you can leave the name as <b>THERMOSTAT</b> .

- "Usage Information" related to thermostats is information including, but not limited to, actual indoor and outdoor temperature and humidity information, GPS/geolocation information, thermostat usage data such as heating, ventilating, and air-conditioning ("HVAC") relay status, runtimes, settings, time of events in home, audio clips (for voice-controlled thermostats or applications), HVAC diagnostic and usage logs from the HVAC system and alerts from the HVAC system, as well as information about your electrical usage relating to electrical loads monitored by the System, your overall household electrical usage, the interaction of your thermostat and third party devices and your use of the System, among other things. "Usage Information" related to security, video, fire, lifestyle, or other systems is information including, but not limited to, the time of events in the home, scheduling, arm/disarm or other usage schedules, usage and alert logs, including your use of the functions and features available in the System, video or audio clips of activities in the home or business (if applicable), GPS/geolocation information (if applicable), and photos stored in the System (if applicable). We receive this type of information from your System and we may collect this

The Privacy Statement describes, among other things:

- Information we collect:
  - Information you provide; e.g., name, email, address, zip code

*1(B): transmitter means connected to the controller adapted to transmit location data to a remote device physically remote from the controller, so that a location response is induced at the remote device; and;-* For instance, the '739 Accused Products uses a Wi-Fi network connection for transmitting location data to a remote weather service device like accuweather.

## Features of Your Thermostat

With your new thermostat, you can:

- Connect to the Internet to monitor and control your heating/cooling system.
- View and change your heating/cooling system settings.
- View and set temperature and schedules.
- Receive alerts via email and get automatic upgrades.
- View outdoor temperature and humidity (requires Wi-Fi set up and registration).

## SPECIFICATIONS

### WiFi 9000 Color Touchscreen Thermostat

Thermostat Type	Communicating, Digital, Low Voltage, Programmable
WiFi Specifications	802.11b, 802.11g, 802.11n, 2.4GHz range

### Weather / Forecast:

When connected to Wi-Fi and registered on mytotalconnectcomfort.com, the thermostat can display the outdoor weather temperature and 8-hour forecast for your area (based on zip code).

From the thermostat idle screen (touch the main display to toggle between the Active and Idle main screens), touch the weather icon at the bottom center.

Outdoor Weather / Forecast: Display current outdoor weather (based on zip code related to accuweather) and display 5-day forecast

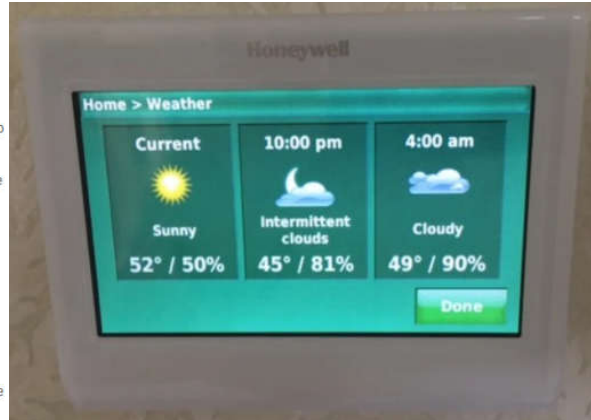
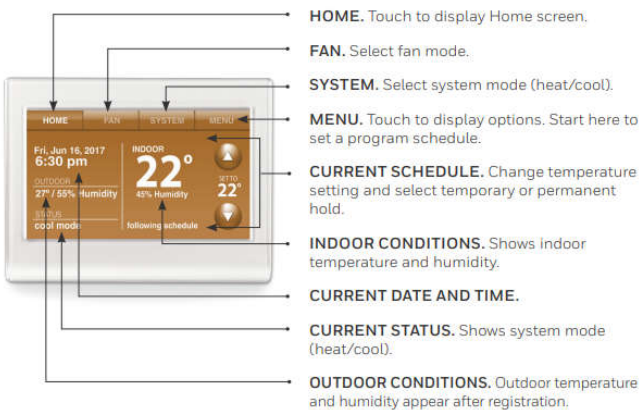
***1(C): location response is storage of the location data at the remote device and correlation of the physical location to location response data stored at or available to the remote device or created by processing of location data at the remote device, whereafter location response data is transmitted from the remote device to the controller;*** -For instance, the '738 Accused Products receives local weather information based on its postal /zip code, from remote weather service device like accuweather and provides the outdoor temperature and weather forecast on screen display. The remote weather service device i.e., accuweather, provides the weather forecast based on the zip code of an area.

**Weather / Forecast:**

When connected to Wi-Fi and registered on mytotalconnectcomfort.com, the thermostat can display the outdoor weather temperature and 8-hour forecast for your area (based on zip code).

From the thermostat idle screen (touch the main display to toggle between the Active and Idle main screens), touch the weather icon at the bottom center.

Outdoor Weather / Forecast: Display current outdoor weather (based on zip code related to accuweather) and display 5-day forecast



### Q: WHAT ARE YOU DOING WITH MY LOCATION DATA?

All AccuWeather products honor device location settings and only processes precise location data to provide functionality that users ask for, such as severe weather alerts, or location-specific forecasts. Whenever possible, we have

90. At least as early as of the date of the filing of the Complaint, Defendant has had actual knowledge of the '739 Patent.

91. Additionally, Defendant contributorily infringes at least one or more claims of the '739 Patent by providing the '739 Accused Products and/or software components thereof, that embody a material part of the claimed inventions of the '739 Patent, that are known by Defendant to be specially made or adapted for use in an infringing manner and are not staple articles with substantial non-infringing uses. The '739 Accused Products are specially designed to infringe at least one or more claims of the '739 Patent, and their accused components have no substantial non-infringing uses. In particular, on information and belief, the software modules and code that implement and perform the infringing functionalities identified above are specially made and adapted to carry out said functionality and do not have any substantial non-infringing uses.

92. At least as early as the filing and/or service of this Complaint, Defendant's infringement of the '739 Patent was and continues to be willful and deliberate, entitling Rosen to enhanced damages.

93. Additional allegations regarding Defendant's knowledge of the '739 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

94. Defendant's infringement of the '739 Patent is exceptional and entitles Rosen to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

95. Rosen is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '739 Patent.

96. Rosen is entitled to recover from Defendant all damages that Rosen has sustained as a result of Defendant's infringement of the '739 Patent, including, without limitation, a reasonable royalty.

#### **COUNT IV: INFRINGEMENT OF U.S. PATENT NO. 7,156,318**

97. Rosen incorporates by reference and re-alleges paragraphs 1-96 of this Complaint as if fully set forth herein

98. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the '318 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, among other things, the T10 Pro Smart Thermostat, and other substantially similar products ("the '318 Accused Product").

99. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of Claim 1 of the '318 Patent in connection with the '318 Accused Products. This description is based on publicly available information. Rosen reserves the right to modify this description, including, for example, on the basis of information about the '318 Accused Products that it obtains during discovery

**1: A programmable thermostat system for controlling space conditioning equipment comprising:** - For instance, the '318 Accused Product is a programmable thermostat which controls the room temperature and humidity level (space conditioning equipment).

**Honeywell Home**



**T10 Pro Smart  
Thermostat with  
RedLINK™**

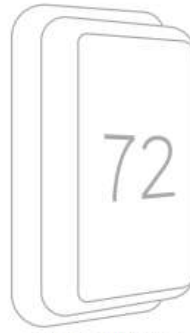
THX321WFS2001W  
Programmable Thermostat

**Professional Install Guide**

Read before installing

**Package Includes:**

- T10 Pro Smart Thermostat
- UWP™ Mounting System
- Standard Installation Adapter (J-box adapter)
- Cover Plate – Medium: Size 5-11/64" X 5-1/2" X 11/16" (131.4 mm x 139.7 mm x 17.5 mm)
- RedLINK Wireless Indoor Air Sensor (QTY 1)
- Screws and Anchors
- Professional Install Guide
- Getting Started Guide



THX321WFS2001W depicted  
Other models may vary



Search for local rebates.  
Honeywell Home thermostats  
work with utility programs to  
reward you for helping save  
energy.  
[HoneywellHome.com/Rebates](https://www.honeywellhome.com/Rebates)

The T10 Pro Smart Thermostat works with Smart Room Sensors to help you adjust the temperature and humidity from anywhere and stay cozy in the rooms that matter.

Place sensors where you want to see each room's temperature and humidity. Use the multi-room display on the thermostat's touchscreen — or in the Honeywell Home app — to focus on rooms based on occupancy or a specific schedule you choose. When focusing on multiple rooms, the T10 works toward creating an average temperature, balancing the needs across the whole home.



## Dehumidification

The thermostat reads the indoor humidity level and allows the user to set a dehumidification setting. The thermostat controls the humidity level using the cooling system or a whole house dehumidifier.

*1(A) at least one environmental condition sensor providing an electrical signal indicative of the ambient temperature of a conditioned space in which said environmental condition sensor is situated;*— For instance, the '318 Accused Product includes smart room sensors (environmental condition sensor). The sensors detect the current space temperature and displays the current indoor temperature (providing an electrical signal indicative of the ambient temperature of a conditioned space in which said environmental condition sensor is situated).

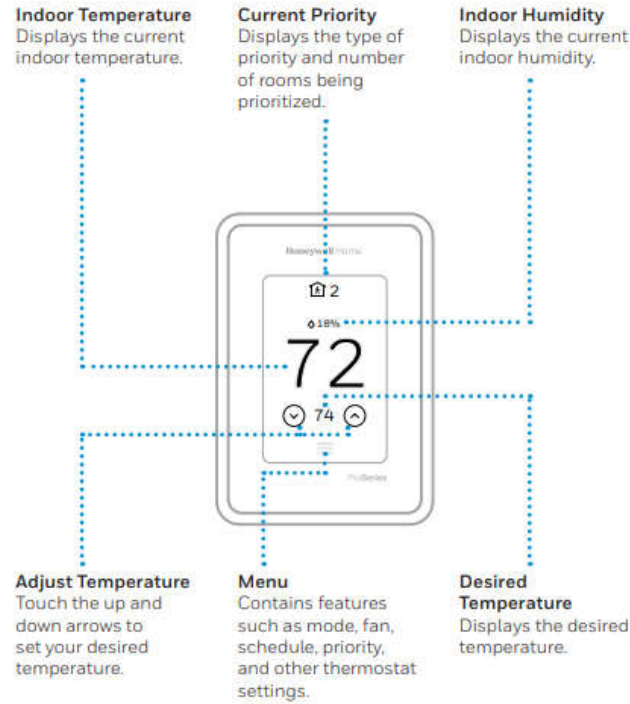
The T10 Pro Smart Thermostat works with Smart Room Sensors to help you adjust the temperature and humidity from anywhere and stay cozy in the rooms that matter.

Place sensors where you want to see each room's temperature and humidity. Use the multi-room display on the thermostat's touchscreen — or in the Honeywell Home app — to focus on rooms based on occupancy or a specific schedule you choose. When focusing on multiple rooms, the T10 works toward creating an average temperature, balancing the needs across the whole home.

The thermostat sensor or indoor sensor senses the current space temperature. The proportional error is calculated by comparing the sensed temperature to the setpoint temperature. The deviation from the setpoint is the proportional error.

The thermostat also determines integral error, which is a deviation based on the length of error time (how long the sensed room temperature has been away from the setpoint temperature). The sum of the two errors is the (P + I) error. The cycle rate used to reach and maintain the setpoint temperature is computed using the P + I control algorithm. The addition of the integral error is what differentiates the thermostat from mechanical thermostats.





***1(B): a transparent touch pad juxtaposed with a liquid crystal display to constitute a touch screen for interactive interface with a user;*** - For instance, the '318 Accused Products includes graphical LCD color touchscreen with multi-room display.

## T10 PRO SMART THERMOSTAT WITH REDLINK® ROOM SENSOR

THX321WFS2001W/U

[OVERVIEW](#) [APP](#) [WORKS WITH](#) [FEATURES](#) [SPECIFICATIONS](#) [COMPATIBILITY](#) [GET STARTED](#) [SUPPORT](#) [COMPARE PRODUCTS](#) [RELATED PRODUCTS](#) [REVIEWS](#)

Display Type

Touch Screen

**T10 Pro Smart Thermostat with RedLINK™ Room Sensor**

- Graphical LCD color touchscreen with multi-room display
- RedLINK™ Room Sensors detect temperature, humidity and motion
- Up to 20 RedLINK™ Room Sensors can be connected per thermostat
- 200-foot sensor range
- Works with Apple HomeKit, Amazon Alexa, Google Assistant and more
- ENERGY STAR®-certified
- Demand Response program compatible
- Supports Wi-Fi 802.11 B/G/N 2.4 and 5 GHz
- Thermostat dimensions: 3.7"W x 4.92"H x 0.94"D
- RedLINK™ Room Sensor dimensions: 2.59"W x 2.59"H x 0.75"D
- 5-year warranty

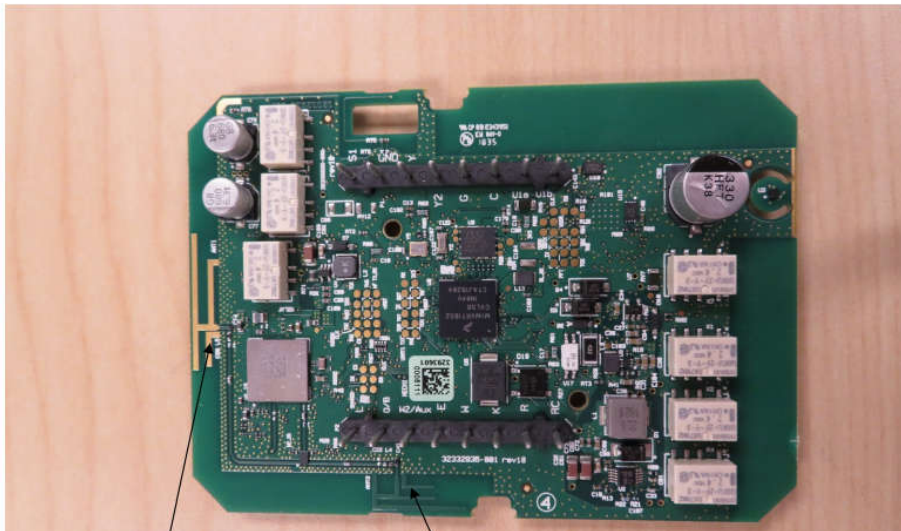


**1(C): a processor, said processor including;**For instance, the '318 Accused Products includes a processor.

EXHIBIT 4-2A Internal Photos

HS9-THX321WF01 / 573R-THX321WF01

MAIN PCB TOP



**1(C)1): a central processing unit;**For instance, in the '318 Accused Products the processor, includes a central processing unit.

**1(C)2): a real time clock;**For instance, in the '318 Accused Products the processor,

includes a real time clock.

***1(C)3): a memory coupled to said central processing unit for storing program and data information; and;***-For instance, in the '318 Accused Products the application processor includes internal memory.

EXHIBIT 4-2A Internal Photos

HS9-THX321WF01 / 573R-THX321WF01

MAIN PCB TOP

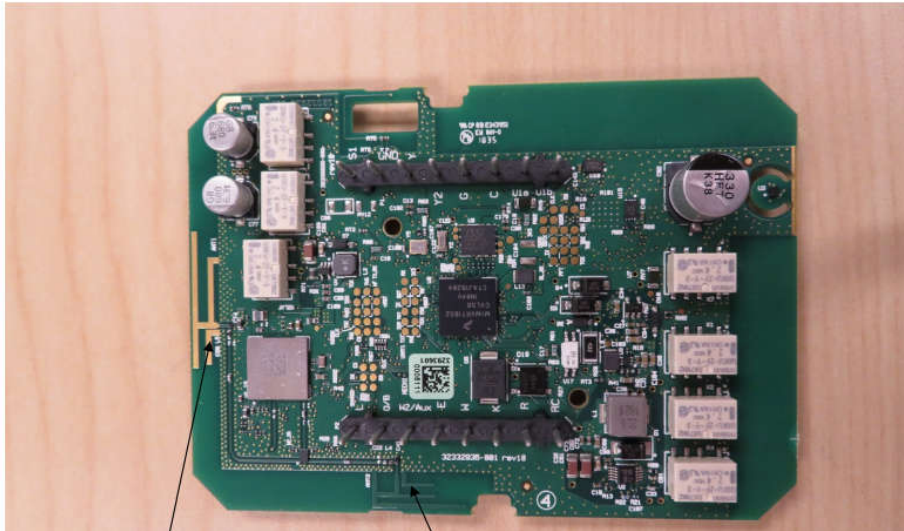


Figure 2 shows the functional modules in the i.MX RT1050 processor system<sup>1</sup>.

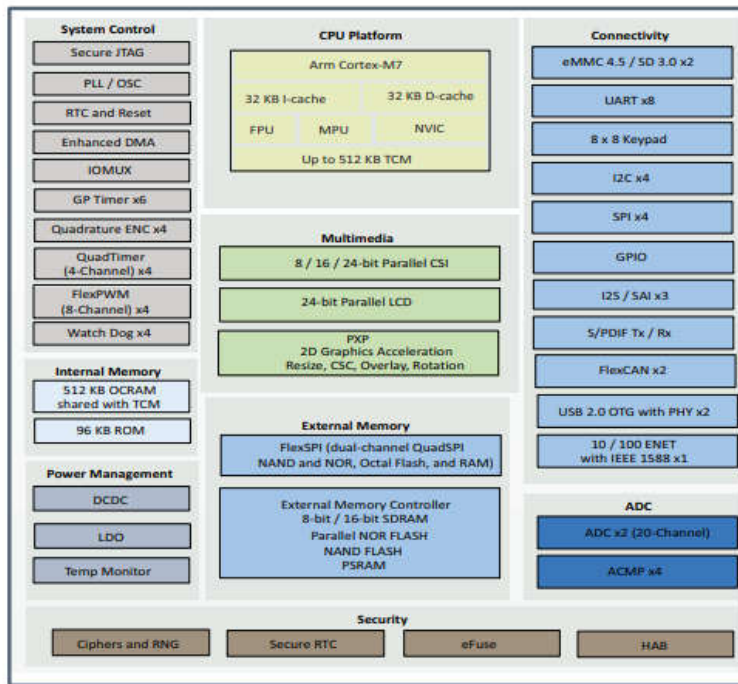


Figure 2. i.MX RT1050 system block diagram

*1(C)4): an input/output unit coupled between said processor and said touch screen for carrying out information transfer there between, said input/output unit further including;*-For instance, the '318 Accused Products includes a i.MX RT1050 series application processor i.e., MIMXRT1052CVL5B. i.MX RT1050 includes GPIO (General Purpose Input Output) module for providing coupling between processor and LCD interface.

Figure 2 shows the functional modules in the i.MX RT1050 processor system<sup>1</sup>.

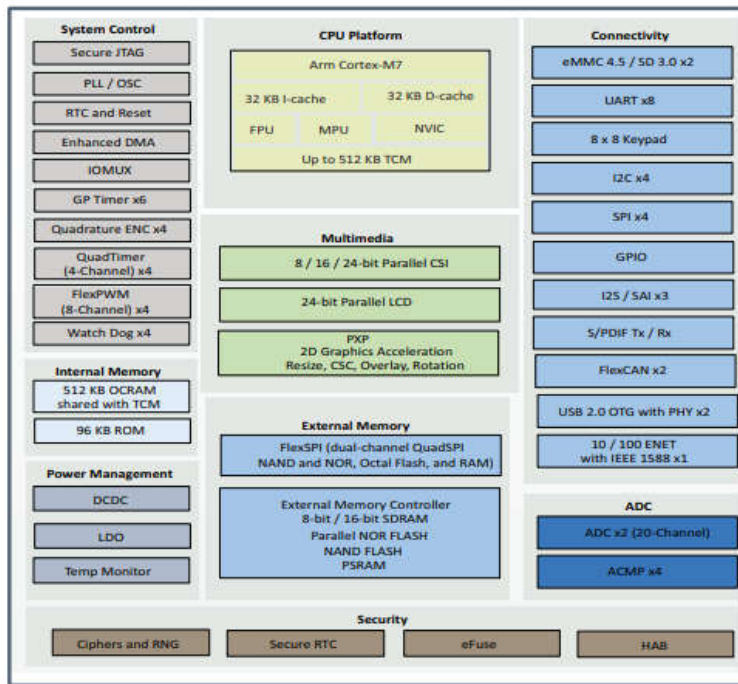


Figure 2. i.MX RT1050 system block diagram

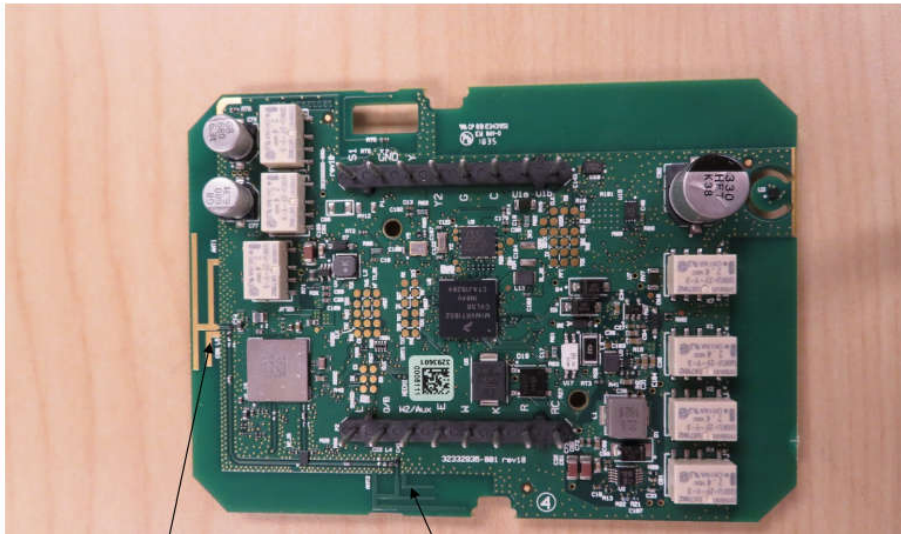
*1(C)4a): a sensor input coupled to each said environmental condition sensors for receiving said electrical signal therefrom; and;* For instance, the '318 Accused Products include an i.MX RT1050 series application processor i.e., MIMXRT1052CVL5B which includes GPIO module. Using GPIO, thermostat sensor senses the current space temperature (receiving said electrical signal).



EXHIBIT 4-2A Internal Photos

HS9-THX321WF01 / 573R-THX321WF01

MAIN PCB TOP

**P + I CONTROL**

A conventional mechanical thermostat does not control temperature precisely at setpoint. Typically there is an offset (droop)\* in the control point as the system load changes. Many factors contribute to offset including the switch differential, thermal lag, overshoot, cycle rates and system load.

The T10 thermostat however, works much differently than a conventional mechanical thermostat. Droop is always set to comfort and not adjustable when controlling a 2 stage furnace or 2 stage heat pump without aux heat. The proprietary algorithm in the thermostat eliminates the factors causing offset (droop). This makes temperature control more accurate than the conventional mechanical or electronic thermostat. The temperature control algorithm is called proportional plus integral (P + I) control.

The thermostat sensor or indoor sensor senses the current space temperature. The proportional error is calculated by comparing the sensed temperature to the setpoint temperature. The deviation from the setpoint is the proportional error.

The thermostat also determines integral error, which is a deviation based on the length of error time (how long the sensed room temperature has been away from the setpoint temperature). The sum of the two errors is the (P + I) error. The cycle rate used to reach and maintain the setpoint temperature is computed using the P + I control algorithm. The addition of the integral error is what differentiates the thermostat from mechanical thermostats.

***1(C)4b): a control output coupled to the space conditioning equipment for issuing control signals thereto; and;***-For instance, the '318 Accused Products control the heating and cooling system (space conditioning equipment).

**Priority**

If wireless indoor temperature/humidity/motion sensors are used, select which sensors are used for temperature control. You can choose active sensor (ones detecting motion) or manually select which sensors to use.



## Selecting system mode

Touch homescreen to wake the thermostat.

Touch the menu icon and then touch "Select Mode."

- **Heat:** Controls the heating system.
- **Cool:** Controls the cooling system.
- **Off:** Turns the heating and cooling systems off.
- **Auto:** When enabled, the thermostat will automatically use heating or cooling to reach the desired temperature. Operation on page 9.
- **Em Heat:** Controls auxiliary or emergency heat; only available on systems with a heat pump. Operation on page 9.

*1(D): a control program stored in said memory for causing said central processing unit to communicate through said input/output unit to selectively;* -For instance, the '318 Accused Products enables a user to set different system modes which are stored on the thermostat.

The T10 Pro Smart Thermostat with RedLINK™ Room Sensor helps prioritize the temperature of multiple rooms, creating a more comfortable home for you and your family. With a sensor in the rooms that matter most, like the kitchen, living room and bedrooms, you can experience truly smart comfort control.

### **Q: How can I uninstall my T10 Pro Smart thermostat with RedLINK?**

A: If you want to replace your T10 Pro Smart thermostat with RedLINK, or if you're moving out of your home and leaving the thermostat behind, you'll first want to clear out the personal settings that are stored on the thermostat. (Even when disconnected from power, the thermostat will keep your settings and home router information in memory.) We recommend resetting the thermostat's Wi-Fi and HomeKit settings (if previously connected).

## Main Menu on Thermostat

From Home Screen, press the menu icon at bottom of the display (3 horizontal lines). If this is not shown at home screen, touch screen to wake display first.

### Main Menu options

**System mode** (Available modes vary depending on how the thermostat was configured)

- Heat
- Off
- Cool
- Auto – Operation on page 9.
- Em Heat – Operation on page 9.

**Fan** (Fan setting not available for all system types)

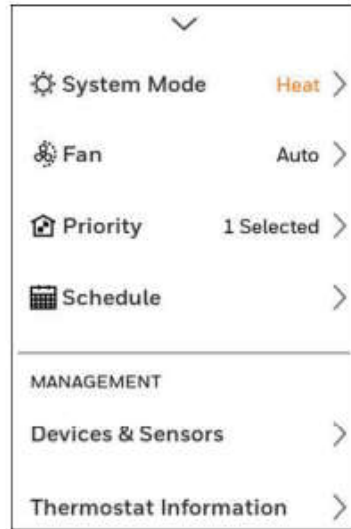
- Auto (Fan only runs with a call for heat or cool, or if set to run with Hum, Dehum, or Vent call)
- On (fan runs continuous)
- Circulate (fan runs randomly approx. 33% of the time)

### Priority

If wireless indoor temperature/humidity/motion sensors are used, select which sensors are used for temperature control. You can choose active sensor (ones detecting motion) or manually select which sensors to use.

### Schedule

- Create new schedule (Set a time-based schedule)
- Disable schedule
- Reset to default Schedule



### Dealer Information

- Model number
- Date code
- Dealer company name and contact information if provided by installer.

### Configuration:

- Wi-Fi

**1(D)1): establish on said liquid crystal display;**—For instance, the '318 Accused Products

include an LCD color touchscreen for display purpose.

## T10 Pro Smart Thermostat with RedLINK™ Room Sensor

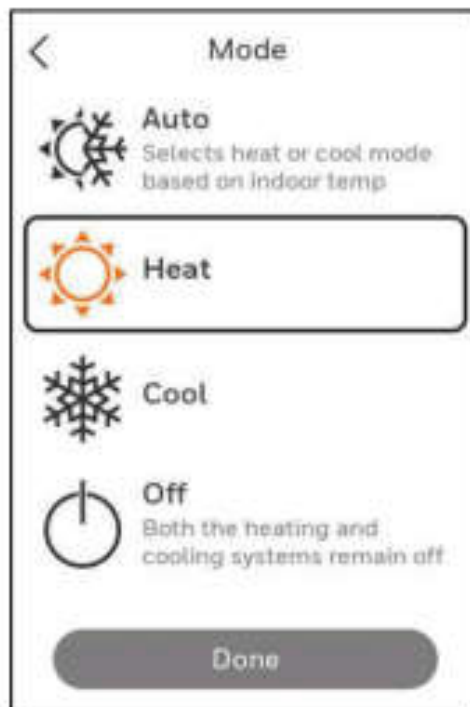
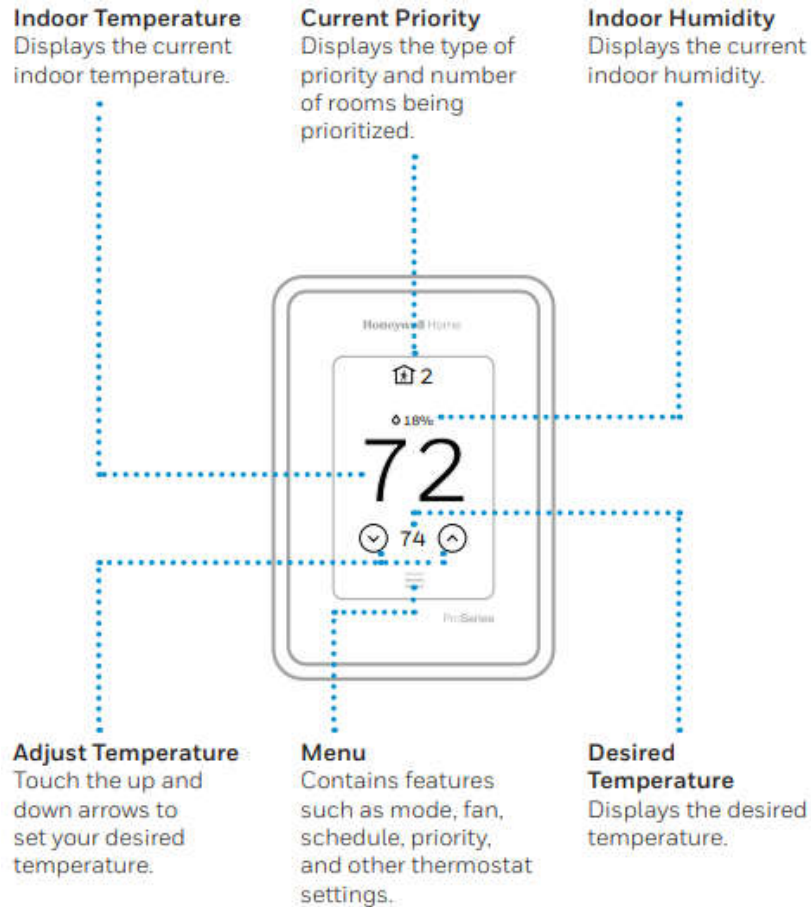
- Graphical LCD color touchscreen with multi-room display
- RedLINK™ Room Sensors detect temperature, humidity and motion
- Up to 20 RedLINK™ Room Sensors can be connected per thermostat
- 200-foot sensor range
- Works with Apple HomeKit, Amazon Alexa, Google Assistant and more
- ENERGY STAR®-certified
- Demand Response program compatible
- Supports Wi-Fi 802.11 B/G/N 2.4 and 5 GHz
- Thermostat dimensions: 3.7"W x 4.92"H x 0.94"D
- RedLINK™ Room Sensor dimensions: 2.59"W x 2.59"H x 0.75"D
- 5-year warranty





***1(D)1)a): a representation of a first virtual button at a first predetermined position on the liquid crystal display; and;-***For instance, the '318 Accused Products Thermostat's LCD screen displays various icons (a first virtual button).





*1(D)1)b): a first legend indicative of a first control function of said thermostat, which first control function is for controlling a first space conditioning equipment component, which first control function is active when the first legend is viewable;;-For instance, in the '318 Accused Products, when a user selects the icon "Cool" on the touch screen of the thermostat, cooling signal is sent to the equipment (a first space conditioning equipment component)..*



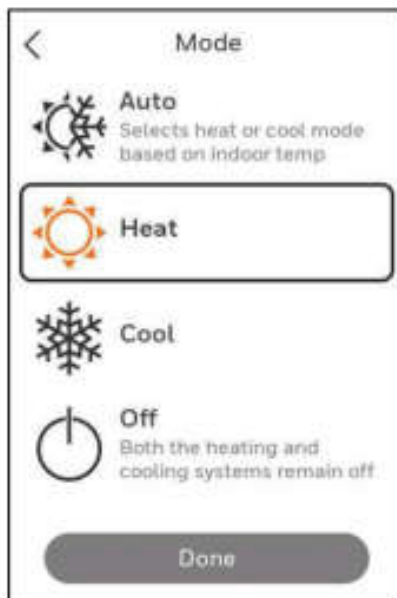
## Selecting system mode

Touch homescreen to wake the thermostat.

Touch the menu icon and then touch "Select Mode."

- **Heat:** Controls the heating system.
- **Cool:** Controls the cooling system.
- **Off:** Turns the heating and cooling systems off.
- **Auto:** When enabled, the thermostat will automatically use heating or cooling to reach the desired temperature. Operation on page 9.
- **Em Heat:** Controls auxiliary or emergency heat; only available on systems with a heat pump. Operation on page 9.





*1(D)2): read the position on the touch pad juxtaposed with said first predetermined position on said liquid crystal display to determine if the representation of said first virtual button has been touched;;*-For instance, in the '318 Accused Products, when a user selects the icon "Cool" on the touch screen of the thermostat (first virtual button has been touched), a cooling signal is sent to the equipment..



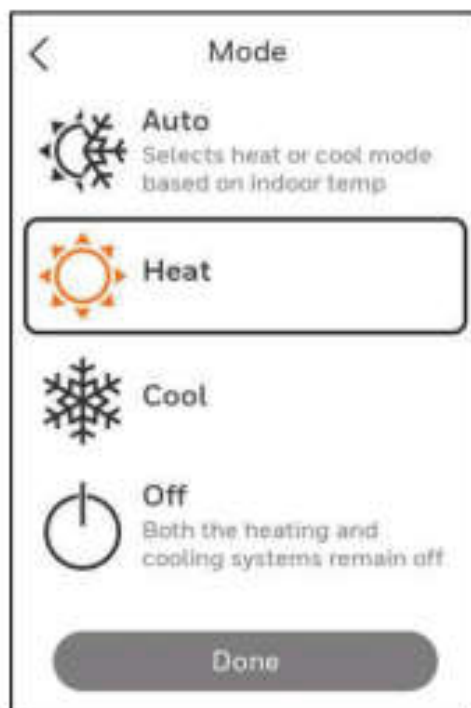


## Selecting system mode

Touch homescreen to wake the thermostat.

Touch the menu icon and then touch "Select Mode."

- **Heat:** Controls the heating system.
- **Cool:** Controls the cooling system.
- **Off:** Turns the heating and cooling systems off.
- **Auto:** When enabled, the thermostat will automatically use heating or cooling to reach the desired temperature. Operation on page 9.
- **Em Heat:** Controls auxiliary or emergency heat; only available on systems with a heat pump. Operation on page 9.



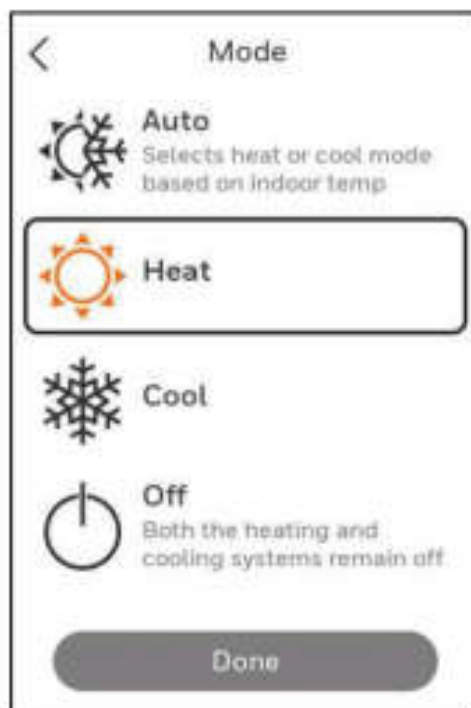
*1(D)3): if the first virtual button has been touched;*—For instance, the '318 Accused Products provides for a user to set different modes by touching the virtual buttons such as" Cool" or " Heat".

## Selecting system mode

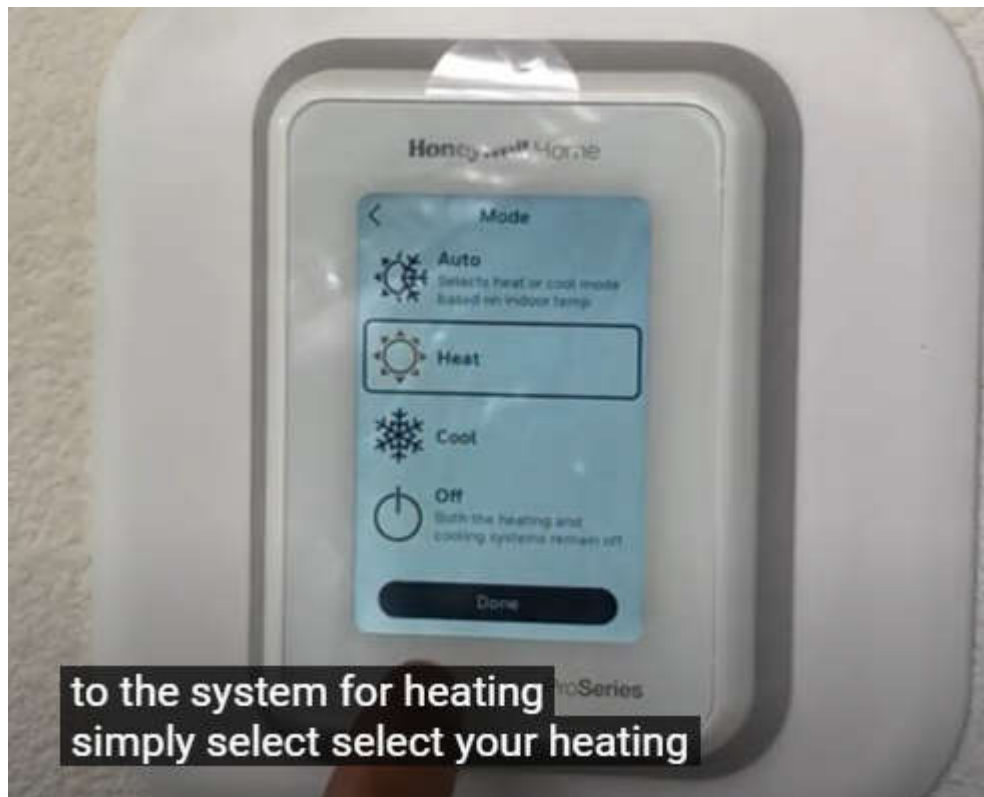
Touch homescreen to wake the thermostat.

Touch the menu icon and then touch "Select Mode."

- **Heat:** Controls the heating system.
- **Cool:** Controls the cooling system.
- **Off:** Turns the heating and cooling systems off.
- **Auto:** When enabled, the thermostat will automatically use heating or cooling to reach the desired temperature. Operation on page 9.
- **Em Heat:** Controls auxiliary or emergency heat; only available on systems with a heat pump. Operation on page 9.



*1(D)3)a): determining that the thermostat has been directed to control a second space conditioning equipment component;*—For instance, the '318 Accused Products allows a user to set different modes by touching the virtual buttons such as "Cool", "Heat", Auto, etc. When a user selects "Heat," the thermostat controls the heating system (a second space conditioning equipment).



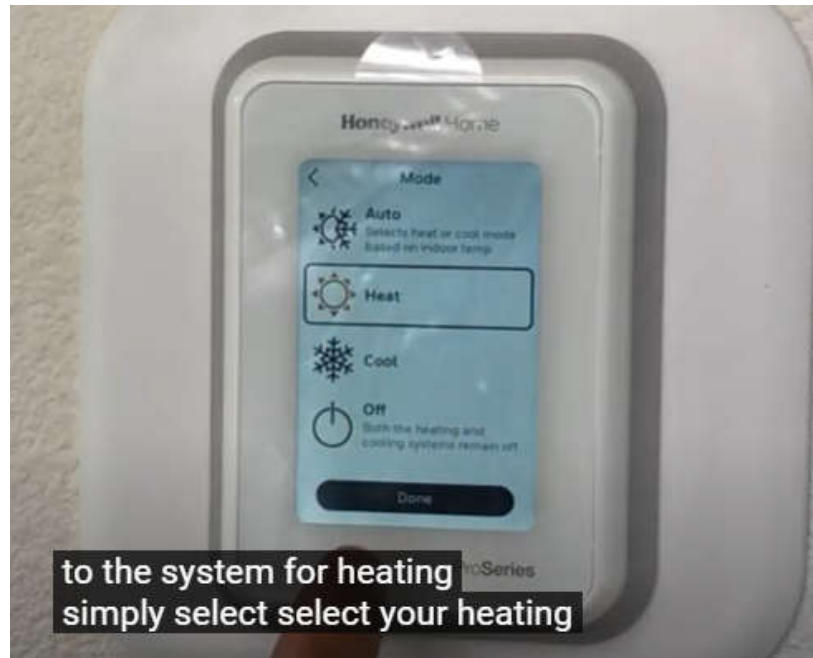
### Selecting system mode

Touch homescreen to wake the thermostat.

Touch the menu icon and then touch "Select Mode."

- **Heat:** Controls the heating system.
- **Cool:** Controls the cooling system.
- **Off:** Turns the heating and cooling systems off.
- **Auto:** When enabled, the thermostat will automatically use heating or cooling to reach the desired temperature. Operation on page 9.
- **Em Heat:** Controls auxiliary or emergency heat; only available on systems with a heat pump. Operation on page 9.

*1(D)3)b): activating a second control function for controlling the second space conditioning equipment component; and;* -For instance, the '318 Accused Products includes a processor. When a user selects "Heat", the thermostat controls the heating system (activating a second control function for controlling the second space conditioning equipment component).



## Selecting system mode

Touch homescreen to wake the thermostat.

Touch the menu icon and then touch "Select Mode."

- **Heat:** Controls the heating system.
- **Cool:** Controls the cooling system.
- **Off:** Turns the heating and cooling systems off.
- **Auto:** When enabled, the thermostat will automatically use heating or cooling to reach the desired temperature. Operation on page 9.
- **Em Heat:** Controls auxiliary or emergency heat; only available on systems with a heat pump. Operation on page 9.

*1(D)3)c): displaying on said liquid crystal display a second legend indicative of said second control function of said thermostat, which second control function is for controlling the second space conditioning equipment component, which second control function is active when the second legend is viewable.;* For instance, in the '318 Accused Products, when a user selects "Heat", the thermostat which controls the heating system (activating a second control function for controlling the second space conditioning equipment component) displays 'Heat' on the screen of the thermostat.



## Selecting system mode

Touch homescreen to wake the thermostat.

Touch the menu icon and then touch "Select Mode."

- **Heat:** Controls the heating system.
- **Cool:** Controls the cooling system.
- **Off:** Turns the heating and cooling systems off.
- **Auto:** When enabled, the thermostat will automatically use heating or cooling to reach the desired temperature. Operation on page 9.
- **Em Heat:** Controls auxiliary or emergency heat; only available on systems with a heat pump. Operation on page 9.

100. At least as early as of the date of the filing of the Complaint, Defendant has had actual knowledge of the '318 Patent.



101. Additionally, Defendant contributorily infringes at least one or more claims of the '318 Patent by providing the '318 Accused Products and/or software components thereof, that embody a material part of the claimed inventions of the '318 Patent, that are known by Defendant to be specially made or adapted for use in an infringing manner, and are not staple articles with substantial non-infringing uses. The '318 Accused Products are specially designed to infringe at least one or more claims of the '318 Patent, and their accused components have no substantial non-infringing uses. In particular, on information and belief, the software modules and code that implement and perform the infringing functionalities identified above are specially made and adapted to carry out said functionality and do not have any substantial non-infringing uses.

102. At least as early as the filing and/or service of this Complaint, Defendant's infringement of the '318 Patent was and continues to be willful and deliberate, entitling Rosen to enhanced damages.

103. Additional allegations regarding Defendant's knowledge of the '318 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

104. Defendant's infringement of the '318 Patent is exceptional and entitles Rosen to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

105. Rosen is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '318 Patent.

106. Rosen is entitled to recover from Defendant all damages that Rosen has sustained as a result of Defendant's infringement of the '318 Patent, including, without limitation, a reasonable royalty.



**COUNT V: INFRINGEMENT OF U.S. PATENT NO. 7,185,825**

107. Rosen incorporates by reference and re-alleges paragraphs 1-106 of this Complaint as if fully set forth herein

108. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the '825 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, among other things, the T10 Pro Smart Thermostat, and other substantially similar products, (“the '825 Accused Products”).

109. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of Claim 1 of the '825 Patent in connection with the '825 Accused Products. This description is based on publicly available information. Rosen reserves the right to modify this description, including, for example, on the basis of information about the '825 Accused Products that it obtains during discovery

***1: A programmable thermostat for controlling space conditioning equipment comprising:*** - For instance, the '825 Accused Product is a programmable thermostat which controls the cooling, heating and heat pump systems (space conditioning equipment).

**Honeywell Home**



## T10 Pro Smart Thermostat with RedLINK™

THX321WFS2001W  
Programmable Thermostat

### Professional Install Guide

Read before installing

.....  
**Package Includes:**

- T10 Pro Smart Thermostat
  - UWP™ Mounting System
  - Standard Installation Adapter (J-box adapter)
  - Cover Plate – Medium: Size 5-11/64" X: 5-1/2" X 11/16" (131.4 mm x 139.7 mm x 17.5 mm)
  - RedLINK Wireless Indoor Air Sensor (QTY 1)
  - Screws and Anchors
  - Professional Install Guide
  - Getting Started Guide
- .....



*THX321WFS2001W depicted.  
Other models may vary.*



Search for local rebates.  
Honeywell Home thermostats  
work with utility programs to  
reward you for helping save  
energy.  
[HoneywellHome.com/Rebates](https://www.honeywellhome.com/rebates)

### Compatibility

- Compatible with most heating, cooling, and heat pump systems

## Selecting system mode

Touch homescreen to wake the thermostat.

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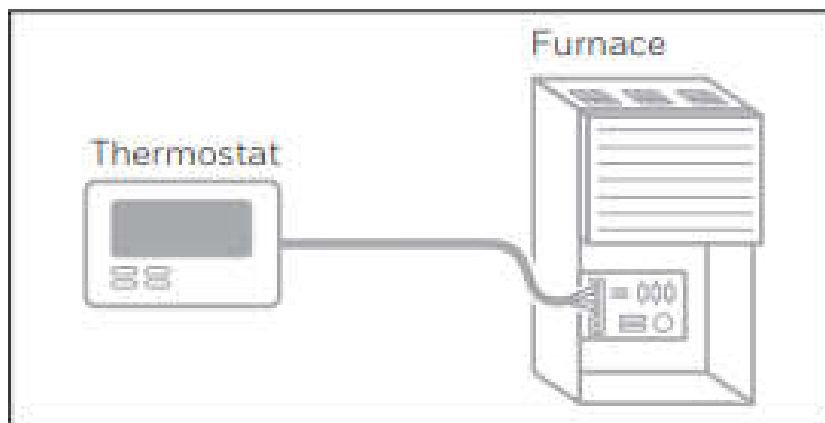
### Notes:

- All available modes may not be shown for some applications. Scroll down to see more mode options (if available).
- Auto mode may not appear on the thermostat screen or in the app depending on your equipment, and how your thermostat is configured.
- When Auto is selected, "Heat to" and "Cool to" will both be shown from the "active" home screen.
- Em Heat is only available for heat pump systems. The thermostat must also be configured to control a heat pump and an auxiliary/emergency heat stage.
- When Auto is selected, "Heat to" and "Cool to" will both be shown from the "active" home screen.

*1(A): means coupling suitable power for energizing said thermostat from said space conditioning equipment to said thermostat;*— For instance, the '825 Accused Product is powered by 24 volts (power for energizing) from HVAC transformer (said space conditioning equipment).

## Compatibility

- Compatible with most heating, cooling, and heat pump systems
- Required: 24 VAC power ("C" wire)



**Battery Replacement (indoor sensor)**

The T10 thermostat does not use any batteries. It is powered by 24 volts from the HVAC transformer using the C (common) wire.

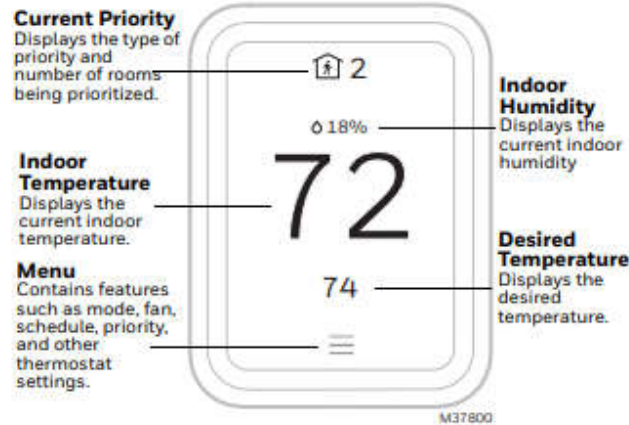
*1(B): an interactive interface for a user to enter programming information into said thermostat;* - For instance, the '825 Accused Products provides graphical LCD color touchscreen with multi-room display. The touchscreen enables a user to configure settings such as set schedules, priorities etc. (to enter programming information).

**T10 Pro Smart Thermostat with RedLINK™ Room Sensor**

- Graphical LCD color touchscreen with multi-room display
- RedLINK™ Room Sensors detect temperature, humidity and motion
- Up to 20 RedLINK™ Room Sensors can be connected per thermostat
- 200-foot sensor range

## Using your thermostat

The screen will wake up by pressing the center area of the displayed temperature.



### Prioritize multiple rooms at once.

Define a desired temperature and select specific rooms you want to prioritize or choose to prioritize based on motion in active rooms.\*



### Schedule your comfort, your way.

Make your own schedule in the app or on the thermostat, or allow each sensor's motion-detection technology to shift priority automatically as you move around the house.



### Comfort at home. Savings when away.

The geofencing feature in the Honeywell Home app allows the T10 Pro Smart Thermostat to know when you're coming and going to automatically optimize comfort and savings.

\*Motion detection does not change programmed setpoints.



*1(C): a temperature sensor for providing an electrical signal indicative of the temperature of a conditioned space in which the temperature sensor is situated;*—For instance, the '825 Accused Products works with smart room sensors (temperature sensor). The smart room sensors detect the current space temperature and enables a user to see the current indoor temperature.



The T10 Pro Smart Thermostat works with Smart Room Sensors to help you adjust the temperature and humidity from anywhere and stay cozy in the rooms that matter.

Place sensors where you want to see each room's temperature and humidity. Use the multi-room display on the thermostat's touchscreen — or in the Honeywell Home app — to focus on rooms based on occupancy or a specific schedule you choose. When focusing on multiple rooms, the T10 works toward creating an average temperature, balancing the needs across the whole home.

The thermostat sensor or indoor sensor senses the current space temperature. The proportional error is calculated by comparing the sensed temperature to the setpoint temperature. The deviation from the setpoint is the proportional error.

The thermostat also determines integral error, which is a deviation based on the length of error time (how long the sensed room temperature has been away from the setpoint temperature). The sum of the two errors is the (P + I) error. The cycle rate used to reach and maintain the setpoint temperature is computed using the P + I control algorithm. The addition of the integral error is what differentiates the thermostat from mechanical thermostats.

#### T10 Pro Smart Thermostat with RedLINK™ Room Sensor

- Graphical LCD color touchscreen with multi-room display
- RedLINK™ Room Sensors detect temperature, humidity and motion
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- Works with Apple HomeKit, Amazon Alexa, Google Assistant and more
- ENERGY STAR®-certified
- Demand Response program compatible
- Supports Wi-Fi 802.11 B/G/N 2.4 and 5 GHz
- Thermostat dimensions: 3.7"W x 4.92"H x 0.94"D
- RedLINK™ Room Sensor dimensions: 2.59"W x 2.59"H x 0.75"D
- 5-year warranty



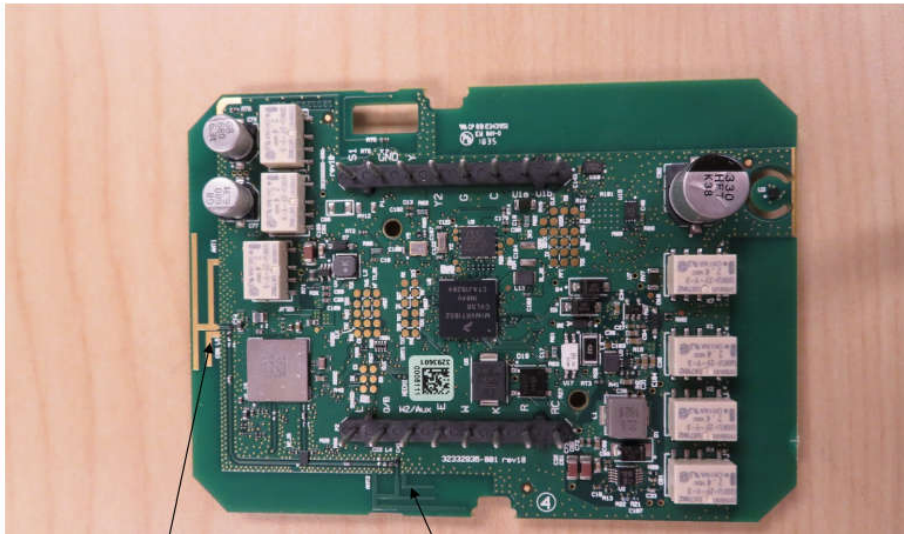
***1(D): a processor, said processor including;***—For instance, the '825 Accused Products includes a processor.



EXHIBIT 4-2A Internal Photos

HS9-THX321WF01 / 573R-THX321WF01

MAIN PCB TOP



***1(D)1): a central processing unit;***-For instance, in the '825 Accused Products the processor, includes a central processing unit.

***1(D)2): a first memory coupled to said central processing unit for storing program and data information; and;***-For instance, in the '825 Accused Products the application processor includes internal memory.

EXHIBIT 4-2A Internal Photos

HS9-THX321WF01 / 573R-THX321WF01

MAIN PCB TOP

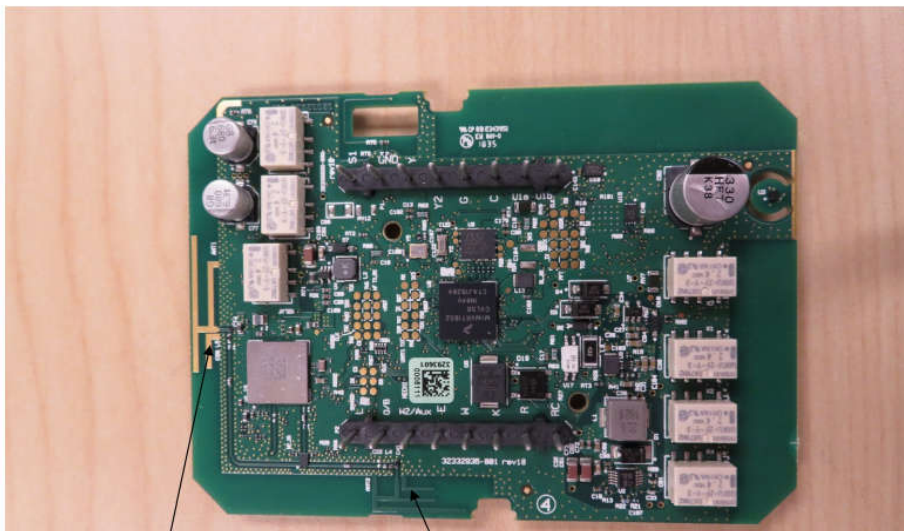


Figure 2 shows the functional modules in the i.MX RT1050 processor system<sup>1</sup>.

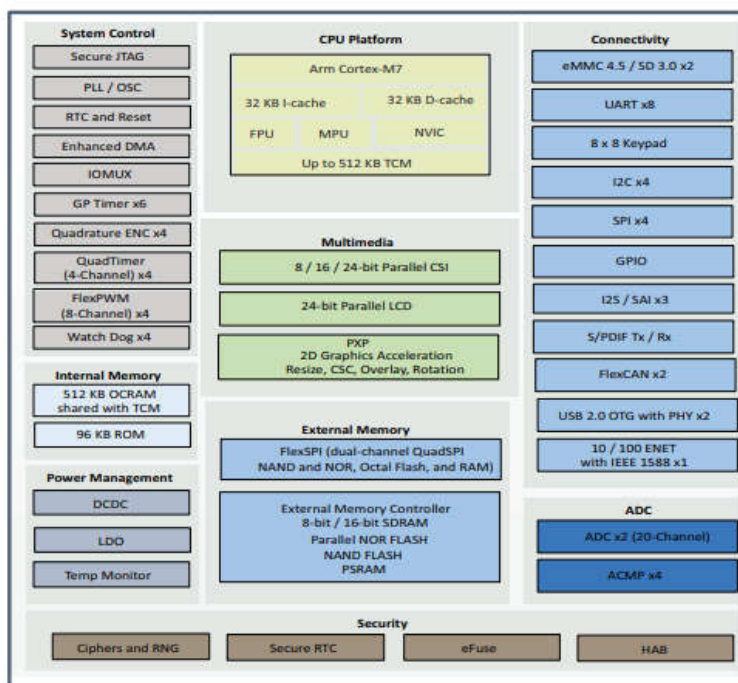
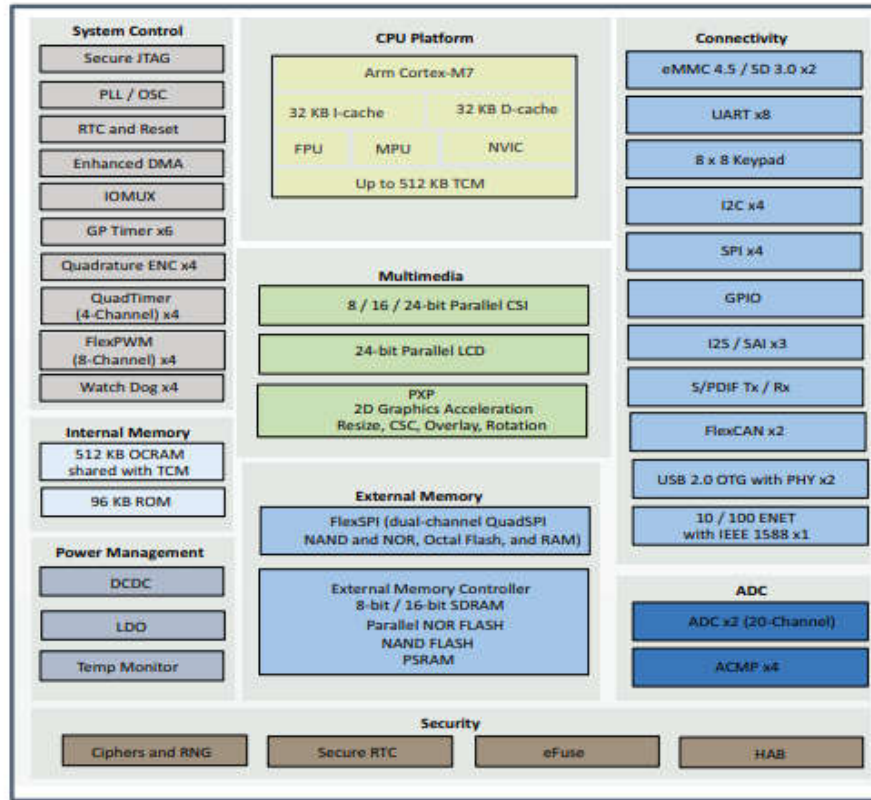


Figure 2. i.MX RT1050 system block diagram

**1(D)3): an input/output unit including:** - For instance, the '825 Accused Products includes input/output.

GPIO1 GPIO2 GPIO3 GPIO4 GPIO5	General Purpose I/O Modules	System Control Peripherals	Used for general purpose input/output to external ICs. Each GPIO module supports up to 32 bits of I/O.
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Figure 2 shows the functional modules in the i.MX RT1050 processor system<sup>1</sup>.



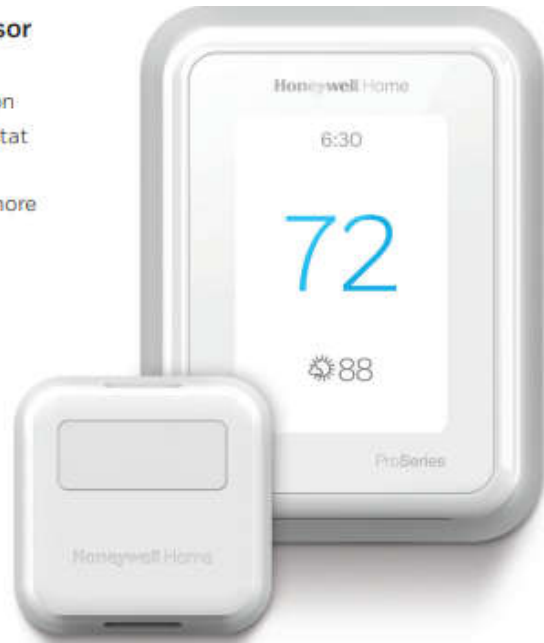
***1(D)3)a): a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom; and;***—For instance, the '825 Accused Products include an i.MX RT1050 series application processor i.e., MIMXRT1052CVL5B which includes GPIO module. Using GPIO, thermostat sensor senses the current space temperature (receiving said electrical signal).

The thermostat sensor or indoor sensor senses the current space temperature. The proportional error is calculated by comparing the sensed temperature to the setpoint temperature. The deviation from the setpoint is the proportional error.

The thermostat also determines integral error, which is a deviation based on the length of error time (how long the sensed room temperature has been away from the setpoint temperature). The sum of the two errors is the (P + I) error. The cycle rate used to reach and maintain the setpoint temperature is computed using the P + I control algorithm. The addition of the integral error is what differentiates the thermostat from mechanical thermostats.

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***1(C)4b): a control output coupled to the space conditioning equipment for issuing control signals thereto; and;***-For instance, the '825 Accused Products control the heating and cooling system (space conditioning equipment).

### Priority

If wireless indoor temperature/humidity/motion sensors are used, select which sensors are used for temperature control. You can choose active sensor (ones detecting motion) or manually select which sensors to use.



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- **Auto:** When enabled, the thermostat will automatically use heating or cooling to reach the desired temperature. Operation on page 9.
- **Em Heat:** Controls auxiliary or emergency heat; only available on systems with a heat pump. Operation on page 9.

**1(D)4): a real time clock;-** For instance, in the '825 Accused Products the processor, includes a real time clock.

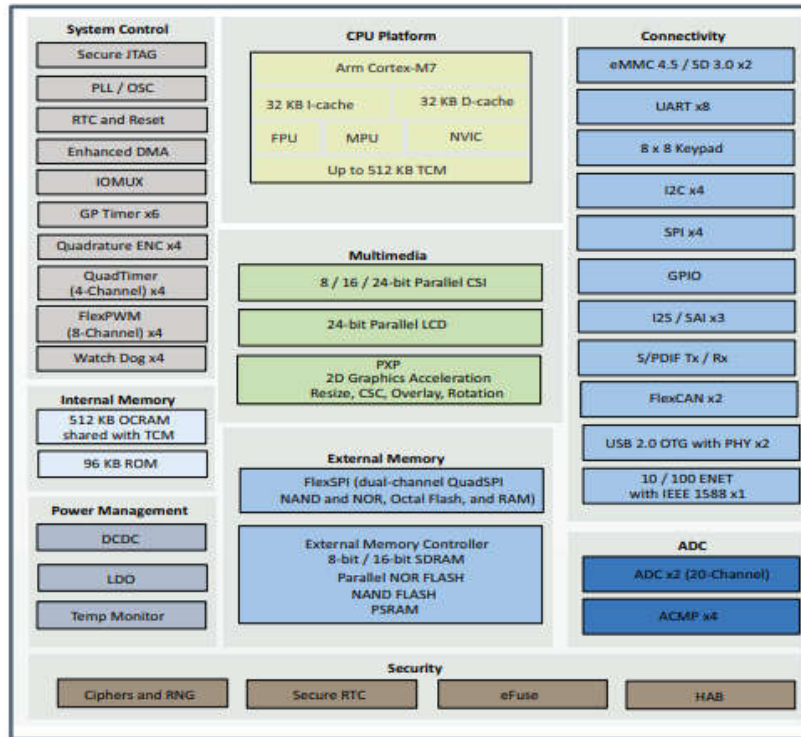
**1(D)5): a non-volatile random access memory; and;-** For instance, in the '825 Accused Products the processor includes Secure RTC which is a Secure Non Volatile storage (a non-volatile random access memory).

SNVS	Secure Non-Volatile Storage	Security	Secure Non-Volatile Storage, including Secure Real Time Clock, Security State Machine, and Master Key Control.
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**1(D)6): a control program stored in said first memory; -** For instance, the memory of '825 Accused Products stores all the settings and other information in the memory.

**Q: How can I uninstall my T10 Pro Smart thermostat with RedLINK?**

A: If you want to replace your T10 Pro Smart thermostat with RedLINK, or if you're moving out of your home and leaving the thermostat behind, you'll first want to clear out the personal settings that are stored on the thermostat. (Even when disconnected from power, the thermostat will keep your settings and home router information in memory.) We recommend resetting the thermostat's Wi-Fi and HomeKit settings (if previously connected).

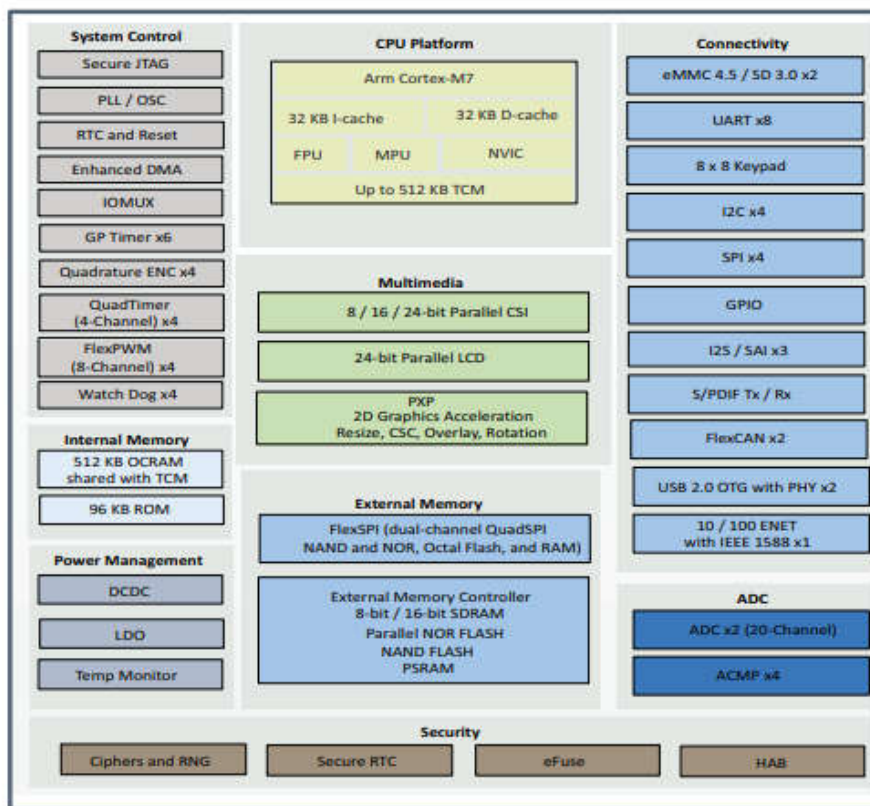
Figure 2 shows the functional modules in the i.MX RT1050 processor system<sup>1</sup>.

**1(D)6)a):** said real time clock to periodically read its current time and date information into said non-volatile memory; and; - For instance, the '825 Accused Products includes i.MX RT1050 series application processor i.e., MIMXRT1052CVL5B which includes RTC and secure RTC to automatically update date and time of the thermostat.

**1(D)6)b):** upon restart after a loss and then return of power from said space conditioning equipment, read the time and date information stored in said non-volatile memory into said real time clock.; - For instance, the '825 Accused Products includes i.MX RT1050 series application processor i.e., MIMXRT1052CVL5B which includes RTC and secure RTC to automatically update date and time of the thermostat.



Figure 2 shows the functional modules in the i.MX RT1050 processor system<sup>1</sup>.



110. At least as early as of the date of the filing of the Complaint, Defendant has had actual knowledge of the '825 Patent.

111. Additionally, Defendant contributorily infringes at least one or more claims of the '825 Patent by providing the '825 Accused Products and/or software components thereof, that embody a material part of the claimed inventions of the '825 Patent, that are known by Defendant to be specially made or adapted for use in an infringing manner and are not staple articles with substantial non-infringing uses. The '825 Accused Products are specially designed to infringe at least one or more claims of the '825 Patent, and their accused components have no substantial non-infringing uses. In particular, on information and belief, the software modules and code that implement and perform the infringing functionalities identified above are specially made and adapted to carry out said functionality and do not have any substantial non-infringing uses.

112. At least as early as the filing and/or service of this Complaint, Defendant's infringement of the '825 Patent was and continues to be willful and deliberate, entitling Rosen to enhanced damages.

113. Additional allegations regarding Defendant's knowledge of the '825 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

114. Defendant's infringement of the '825 Patent is exceptional and entitles Rosen to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

115. Rosen is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '825 Patent.

116. Rosen is entitled to recover from Defendant all damages that Rosen has sustained as a result of Defendant's infringement of the '825 Patent, including, without limitation, a reasonable royalty.

**COUNT VI: INFRINGEMENT OF U.S. PATENT NO. 7,232,075**

117. Rosen incorporates by reference and re-alleges paragraphs 1-116 of this Complaint as if fully set forth herein

118. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the '075 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, among other things, the T10 Pro Smart Thermostat, , and other substantially similar products ("the '075 Accused Product").

119. As just one non-limiting example, set forth below (with claim language in bold and italics) is exemplary evidence of infringement of Claim 1 of the '075 Patent in connection with the

Accused Products. This description is based on publicly available information. Rosen reserves the right to modify this description, including, for example, on the basis of information about the Accused Products that it obtains during discovery

***1): A thermostat system for controlling space conditioning equipment comprising:*** - For instance, the '075 Accused Product is a thermostat system for controlling space conditioning equipment such as fan, heater, boiler, heat pumps, humidifiers, heating system or cooling system.



## Dehumidification

The thermostat reads the indoor humidity level and allows the user to set a dehumidification setting. The thermostat controls the humidity level using the cooling system or a whole house dehumidifier.

## HOME AIR IN PERFECT BALANCE

Control humidification, dehumidification, or ventilation from your thermostat or your Honeywell Home app. Air quality isn't just important for you, it helps your home's heating and cooling system run smoothly too. Ask your pro which air products are right for your home.

*1(A) a temperature sensor for providing an electrical signal indicative of the temperature of a conditioned space in which the temperature sensor is situated;* - For instance, the '075 Accused Product comes with smart room sensors (temperature sensor) which are used to detect the temperature and humidity of a room. The sensor senses the temperature and displays it on the thermostat screen. The temperature sensor is situated within the conditioned space.

The T10 Pro Smart Thermostat works with Smart Room Sensors to help you adjust the temperature and humidity from anywhere and stay cozy in the rooms that matter.

Place sensors where you want to see each room's temperature and humidity.



The thermostat sensor or indoor sensor senses the current space temperature. The proportional error is calculated by comparing the sensed temperature to the setpoint temperature. The deviation from the setpoint is the proportional error.

***1(B): a transparent touch pad juxtaposed over a liquid crystal display to constitute a touch screen for interactive interface with a user and for selectively displaying alphanumeric and graphic devices;*** - For instance, the '075 Accused Products comes with smart room sensor (temperature sensor) which adjusts and controls the temperature and humidity of a room. The display screen is an LCD (liquid crystal display) having transparent touch pad which is an interactive interface, displaying graphical icons and text to represent temperature, schedule a program or set priority for rooms.



### T10 Pro Smart Thermostat with RedLINK™ Room Sensor

- Graphical LCD color touchscreen with multi-room display

***1(C): a processor, said processor including;***—For instance, the ‘075 Accused Products include a processor.



***1(C)1): a central processing unit;***—For instance, the ‘075 Accused Products include a



central processing unit.



***1(C)2): a real time clock;***—For instance, the ‘075 Accused Products include a processor having a real time clock.

***1(C)3): a memory coupled to said central processing unit for storing program and data information; and;***— For instance, the ‘075 Accused Products include a memory coupled to the CPU.

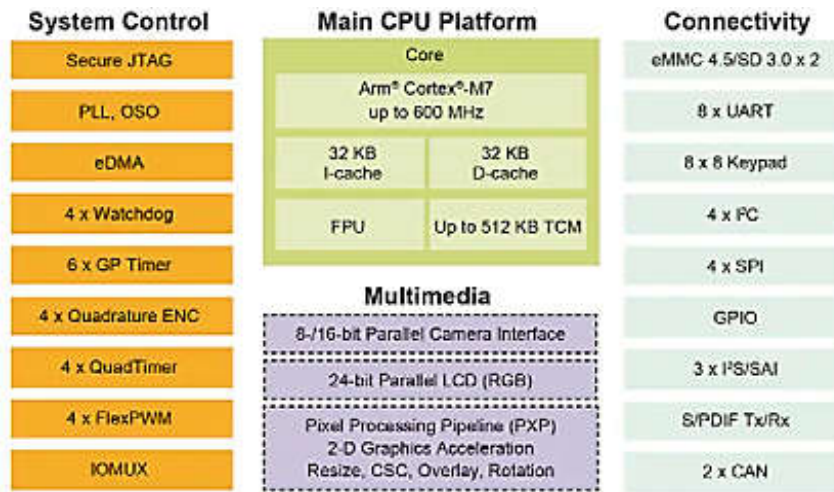
## MIMXRT1052CVL5B

### Operating Features

Parameter	Value
Core: Number of cores (SPEC)	1
Core Type	Arm Cortex-M7
Operating Frequency [Max] (MHz)	528
SRAM (kB)	512

***1(C)4): an input/output unit including*** - For instance, the ‘075 Accused Products include

a processor in the thermostat is having I/O modules. The I/O modules are coupled with the processor.

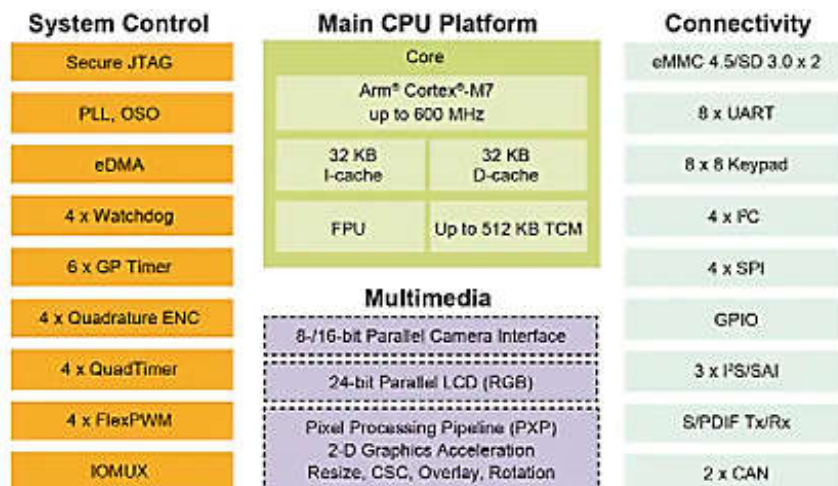


**1(C)4)a): a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom-** For instance, the '075 Accused Products include sensor inputs receive a signal indicative of the temperature to the processor of thermostat. Also, it receives temperatures from different remote sensors.

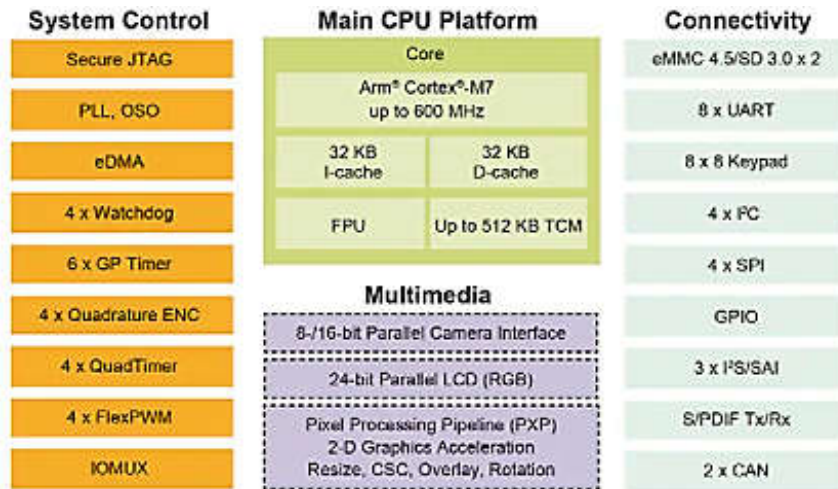
The thermostat sensor or indoor sensor senses the current space temperature. The proportional error is calculated by comparing the sensed temperature to the setpoint temperature. The deviation from the setpoint is the proportional error.

### Devices & Sensors

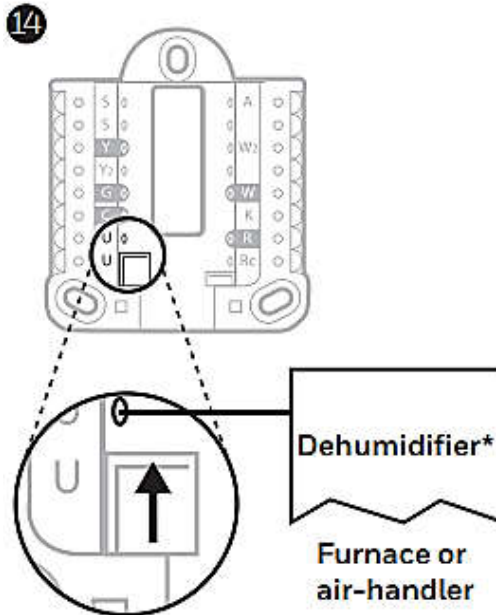
- View the temperature and humidity reading from individual sensors



**1(C)4b): a control output coupled to the space conditioning equipment for issuing control signals thereto; and-** For instance, the '075 Accused Products connect to the heating or cooling systems based on heating or cooling calls (signals) generating from the output present in the thermostat.



Wired to low speed fan terminal on HVAC for dehumidification



\* Label for this terminal varies by equipment

### Common Controller Applications

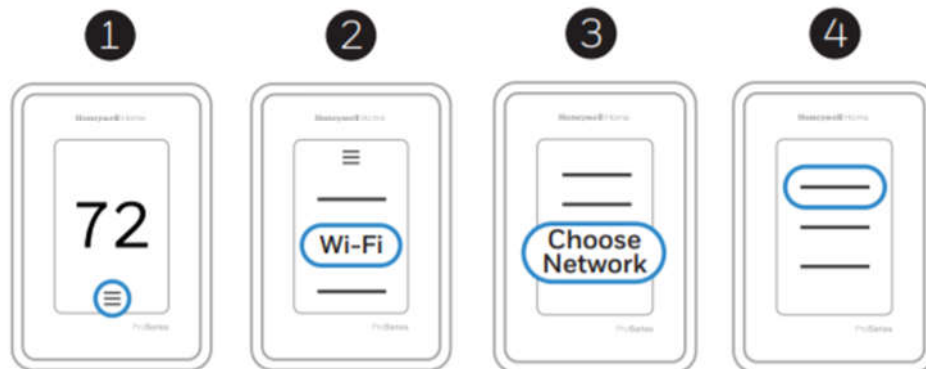
Temperature controllers in industry work much the same way they do in common household applications. A basic temperature controller provides control of industrial or laboratory heating and cooling processes. In a typical application, sensors measure the actual temperature. This sensed temperature is constantly compared to a user setpoint. When the actual temperature deviates from the setpoint, the controller generates an output signal to activate other temperature regulating devices such as heating elements or refrigeration components to bring the temperature back to the setpoint.

*1(C)4)c): a communications interface adapted to establish communications between said processor and a first remote correspondent which is a source of functional programming; and-*

For instance, the '075 Accused Products include Wi-Fi which connects the thermostat to remote correspondent. The remote correspondent which is a source of functional programming can be a fan, humidifiers, or any other space conditioning equipment that is to be controlled.

#### Connect to Wi-Fi

1. Open the Menu
2. Scroll to and select "Wi-Fi"
3. Tap "Choose Network"
4. Select a network



- Wireless connectivity interface for
  - Wi-Fi®, Bluetooth®, Bluetooth Low Energy, ZigBee® and Thread™

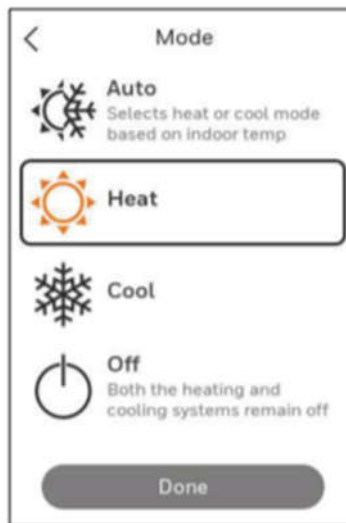
*1(D): a control program stored in said memory for causing said central processing unit to selectively:-* For instance, in the '075 Accused Products, the processor MIMXRT1052CVL5B has 512 kb secondary Random access memory which is used for storing personal settings and

home router information. The personal settings being setting priority or choosing system modes or scheduling a day.

#### Main Menu options

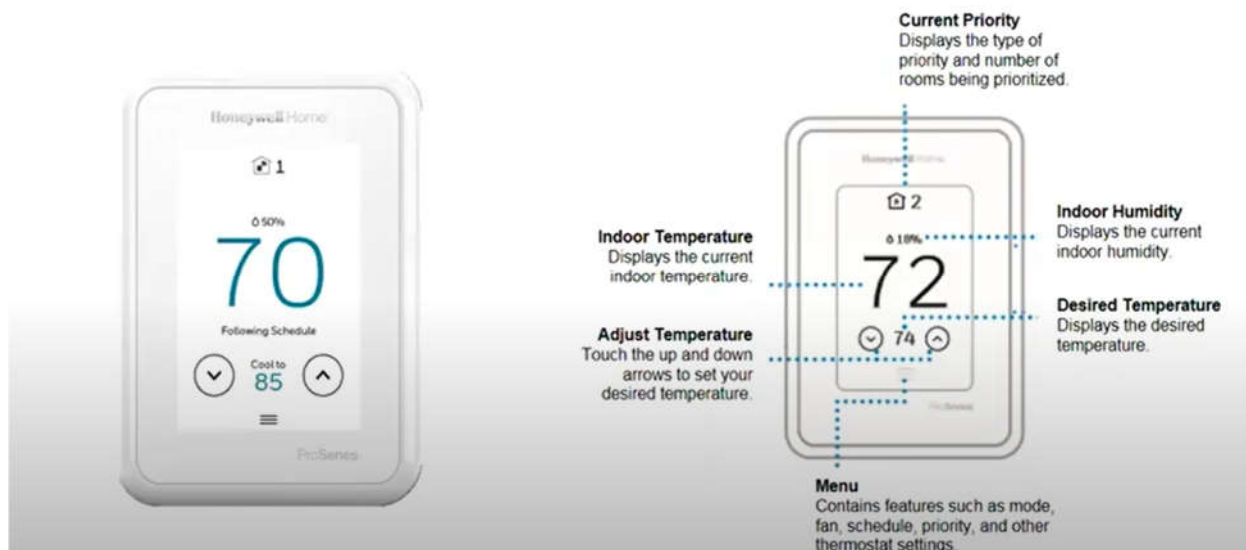
**System mode** (Available modes vary depending on how the thermostat was configured)

- Heat
- Off
- Cool
- Auto – Operation on page 9.
- Em Heat – Operation on page 9.



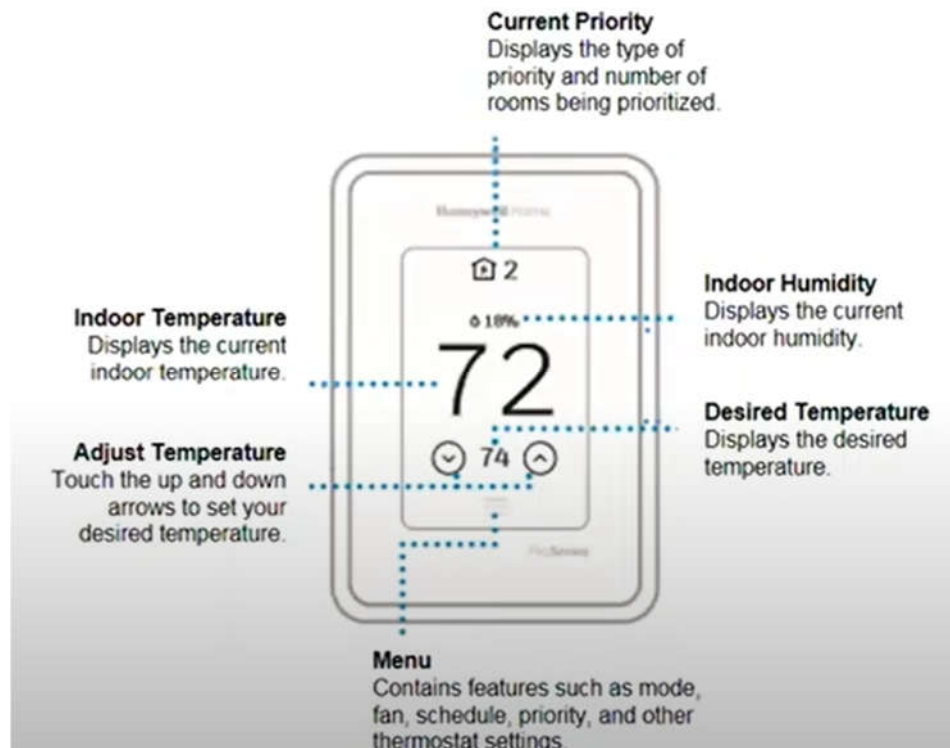
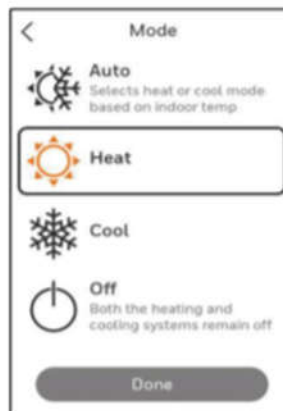
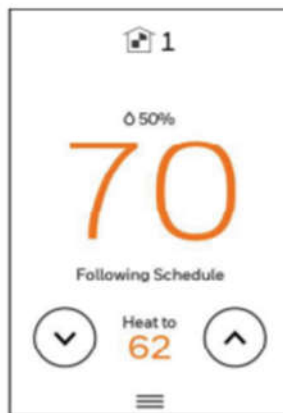
***1(D)1): establish on said liquid crystal display one or more representations of buttons at a separated and predetermined positions;*** - For instance, the '075 Accused Products have an LCD (liquid crystal display) having transparent touch pad which is an interactive interface displaying graphical icons and text to represent temperature, schedule a program, or set priority for rooms. There are different representations at a predetermine locations such as for accessing “menu” for scheduling or setting priority or choosing modes.





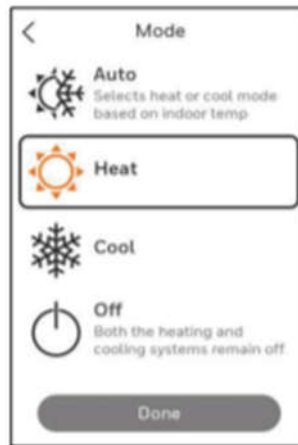
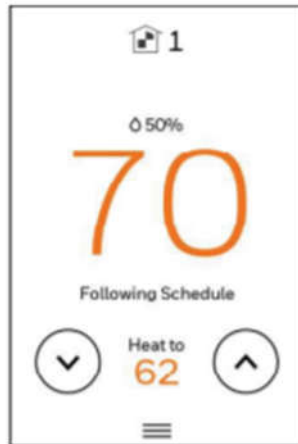
***1(D)2): read the position on the touch pad juxtaposed with said predetermined position to determine if said representation of a button has been touched; and-*** For instance, in the '075 Accused Products ,when the mode chosen in “menu” option is selected to “Heat” , “Heat to” is displayed at a position on the touch screen..





***1(D)3): if said a representation of a button has been touched, processing this information to establish a condition incorporated into the operation of said thermostat system;—***

For example, when the option “Heat” is selected to, “Heat to” is displayed on the touch screen implying that “3 lines” representation was touched to change the mode to “Heat”.



## Selecting system mode

Touch homescreen to wake the thermostat.

Touch the menu icon and then touch "Select Mode."

- **Heat:** Controls the heating system.
- **Cool:** Controls the cooling system.
- **Off:** Turns the heating and cooling systems off.
- **Auto:** When enabled, the thermostat will automatically use heating or cooling to reach the desired temperature. Operation on page 9.
- **Em Heat:** Controls auxiliary or emergency heat; only available on systems with a heat pump. Operation on page 9.

*1(D)4): establish communications between said processor and a first remote correspondent from which is transferred to said memory one or more modules of functional programming; and;*-For instance, the '075 Accused Products include a processor.



- Wireless connectivity interface for
  - Wi-Fi®, Bluetooth®, Bluetooth Low Energy, ZigBee® and Thread™

06:36	if you have the thermostat connected to
06:39	the Internet it
06:40	utilize the local temperature and be
06:44	broadcasted pull right down from your
06:46	<b>Wi-Fi network the t-ten can also control</b>
06:50	one indoor air quality device so if you
06:52	have a humidifier demon afire or
06:54	ventilator it can control one of those
06:56	and that'll be hardwired right from that
06:58	piece of equipment to the t10 thermostat

***1(D)5): operate said transferred functional programming to change or add to representations on the touch screen, where said changes or additions of representation on the touch screen were not available to the control program before their transfer to the memory;;-***

For instance, in the '075 Accused Products, it may read the position of the button on the touch pad to see if it has been pressed (e.g., when placed into Cool mode, the predetermined position of the Cool button is represented on the touch pad in the form of text "cooling"). A communication interface is also included on the touchscreen, allowing the thermostat processor to connect with heaters, humidifiers, air conditioners, or fans (the remote correspondent devices).

***1(E): means coupling said communications interface and said first remote correspondent*** -For instance, the '075 Accused Products connects to a remote correspondent such as fans, humidifiers, or any other space conditioning equipment through Wi-Fi.



- ✓ Up to 3 Heat + 2 Cool Heat Pump
- ✓ Up to 2 Heat + 2 Cool Conventional
- ✓ Dual Fuel
- ✓ Aux Heat Lockout
- ✓ Humidification, Dehumidification, or Ventilation

### Setting the Time/Date

When the thermostat is linked to the home Wi-Fi router and registered to an account using the Honeywell Home app, the date and time will update automatically.

If not using Wi-Fi you can set the time/date as follows:

1. Touch any part of the display to wake the thermostat.
2. Touch the MENU icon at the bottom of the screen.
3. Scroll down and select "Preferences".
4. Select "Date and Time".
5. Date and time information are displayed.

06:36 if you have the thermostat connected to  
 06:39 the Internet it  
 06:40 utilize the local temperature and be  
 06:44 broadcasted pull right down from your  
 06:46 Wi-Fi network the t-ten can also control  
 06:50 one indoor air quality device so if you  
 06:52 have a humidifier demon afire or  
 06:54 ventilator it can control one of those  
 06:56 and that'll be hardwired right from that  
 06:58 piece of equipment to the t10 thermostat

120. At least as early as of the date of the filing of the Complaint, Defendant has had actual knowledge of the '075 Patent.

121. Additionally, Defendant contributorily infringes at least one or more claims of the '075 Patent by providing the '075 Accused Products and/or software components thereof, that embody a material part of the claimed inventions of the '075 Patent, that are known by Defendant to be specially made or adapted for use in an infringing manner and are not staple articles with substantial non-infringing uses. The '075 Accused Products are specially designed to infringe at least one or more claims of the '075 Patent, and their accused components have no substantial non-infringing uses. In particular, on information and belief, the software modules and code that implement and perform the infringing functionalities identified above are specially made and

adapted to carry out said functionality and do not have any substantial non-infringing uses.

122. At least as early as the filing and/or service of this Complaint, Defendant's infringement of the '075 Patent was and continues to be willful and deliberate, entitling Rosen to enhanced damages.

123. Additional allegations regarding Defendant's knowledge of the '075 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

124. Defendant's infringement of the '075 Patent is exceptional and entitles Rosen to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

125. Rosen is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '075 Patent.

126. Rosen is entitled to recover from Defendant all damages that Rosen has sustained as a result of Defendant's infringement of the '075 Patent, including, without limitation, a reasonable royalty.

#### **COUNT VII: INFRINGEMENT OF U.S. PATENT NO. RE40,437**

127. Rosen incorporates by reference and re-alleges paragraphs 1-126 of this Complaint as if fully set forth herein

128. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, the '437 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, among other things, the T10 Pro Smart Thermostat, and other substantially similar products ("the '437 Accused Product

129. As just one non-limiting example, set forth below (with claim language in bold and



italics) is exemplary evidence of infringement of Claim 1 of the '437 Patent in connection with the Accused Products. This description is based on publicly available information. Rosen reserves the right to modify this description, including, for example, on the basis of information about the Accused Products that it obtains during discovery.

***1: An occupancy response system with a central control device adapted to control space conditioning equipment affecting a conditioned space, the central control device located at a single physical location in one of multiple rooms comprising the conditioned space, where remote sensors are located in physical locations substantially apart from the central control device, the improvement comprising:*** - For instance, the '437 Accused Product works with remote room sensors for occupancy detection and controlling the heating and cooling system in a home (conditioning space). The '437 Accused Product supports up to 20 remote sensors and is installed in a central location such as hallway, while the remote sensors are installed in various rooms of the home.



The T10 Pro Smart Thermostat works with Smart Room Sensors to help you adjust the temperature and humidity from anywhere and stay cozy in the rooms that matter.

Place sensors where you want to see each room's temperature and humidity. Use the multi-room display on the thermostat's touchscreen — or in the Honeywell Home app — to focus on rooms based on occupancy or a specific schedule you choose. When focusing on multiple rooms, the T10 works toward creating an average temperature, balancing the needs across the whole home.

## Dehumidification

The thermostat reads the indoor humidity level and allows the user to set a dehumidification setting. The thermostat controls the humidity level using the cooling system or a whole house dehumidifier.

The T10 Pro Smart Thermostat with RedLINK™ Room Sensor helps prioritize the temperature of multiple rooms, creating a more comfortable home for you and your family. With a sensor in the rooms that matter most, like the kitchen, living room and bedrooms, you can experience truly smart comfort control.

*1(A): two or more environmental sensors adapted to measure a local environmental condition and generate signals indicating its value;*— For instance, the '437 Accused Product remote sensors are equipped with temperature sensors for detecting temperature in the installed locations. The sensors further send the corresponding temperature values to the thermostat.

## Installing RedLINK indoor sensors

A wireless sensor is included with the THX321WFS2001W thermostat. The C7189R2002-2 indoor sensor 2 pack can be ordered separate. These sensors detect Temperature, humidity and motion.

Up to 20 of these optional indoor sensors can be used with the T10 thermostat. These sensors can be used to sense

temperature from a different location than the thermostat, average temperature from multiple locations, or control the temperature based on sensor priority (through scheduling, manually selecting priority sensors, or prioritizing active rooms.

## 2-PACK T10 REDLINK® ROOM SENSOR

C7189R2002-2/U

Powerful Sensors. Whole-Home Comfort.

The RedLINK® Room Sensors work with the Honeywell Home T10 Smart Thermostat. The sensors have a 200-foot range that detects indoor temperature, humidity and motion and transmit back to the thermostat to deliver reliable, whole-home comfort.

### Selecting sensors

The temperature reading displayed on the home screen is from the sensor or sensors that are being used for temperature control. You can change which sensors are being used for control by selecting menu-priority. From the home screen, touch the menu icon at the bottom of the display and select "Priority".

*1(B): two or more occupancy sensors adapted to detect occupancy of space around an environmental sensor and generate signals indicating occupancy; and;* - For instance, the '437 Accused Products remote sensors are equipped with Passive Infrared Sensor (PIR) detectors for detecting occupancy and motion in the installed locations. The sensors further send the corresponding motion indication to the thermostat.

### Whole-Home Range

With a 200-foot range, 20 sensors with temperature, humidity, and occupancy detection can connect to your thermostat from throughout your home.

### Q: When using active rooms, how long are those rooms considered after motion has last been detected?

A: The sensor has a dynamic occupancy algorithm based on how many motion events it sees within a certain timeframe. If someone walks through a room, then the room will be occupied for 10 minutes. If someone is in a room longer, then the timeout will be increased automatically.

### Q: How do the wireless indoor sensors detect motion.

A: The sensors use a Passive Infrared Sensor (PIR) detector.

## 2-PACK T10 REDLINK® ROOM SENSOR

C7189R2002-2/U

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The RedLINK® Room Sensors work with the Honeywell Home T10 Smart Thermostat. The sensors have a 200-foot range that detects indoor temperature, humidity and motion and transmit back to the thermostat to deliver reliable, whole-home comfort.



***1(C): either the central control device and one or more of the remote sensors or two or more of the remote sensors each comprise an environmental sensor and an occupancy sensor;-***  
For instance, the '437 Accused Products remote sensors are equipped with temperature sensors and occupancy detectors for detecting temperature and motion in the installed locations.

## 2-PACK T10 REDLINK® ROOM SENSOR

C7189R2002-2/U

Powerful Sensors. Whole-Home Comfort.

The RedLINK® Room Sensors work with the Honeywell Home T10 Smart Thermostat. The sensors have a 200-foot range that detects indoor temperature, humidity and motion and transmit back to the thermostat to deliver reliable, whole-home comfort.



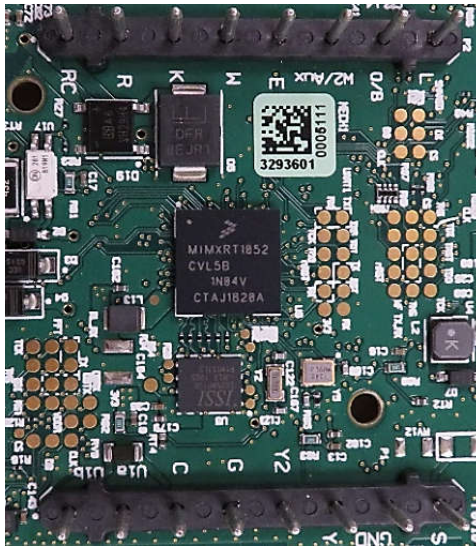
**Q: How do the wireless indoor sensors detects motion.**

**A: The sensors use a Passive Infrared Sensor (PIR) detector.**

### **Whole-Home Range**

With a 200-foot range, 20 sensors with temperature, humidity, and occupancy detection can connect to your thermostat from throughout your home.

***1(D): a central processor for the central control device including;-***For instance, the '437 Accused Products include a central processor,



Home / Processors and Microcontrollers / Arm Microcontrollers / i.MX RT Crossover MCUs  
 / i.MX RT1050 / MIMXRT1052CVL5B

## MIMXRT1052CVL5B

### Operating Features

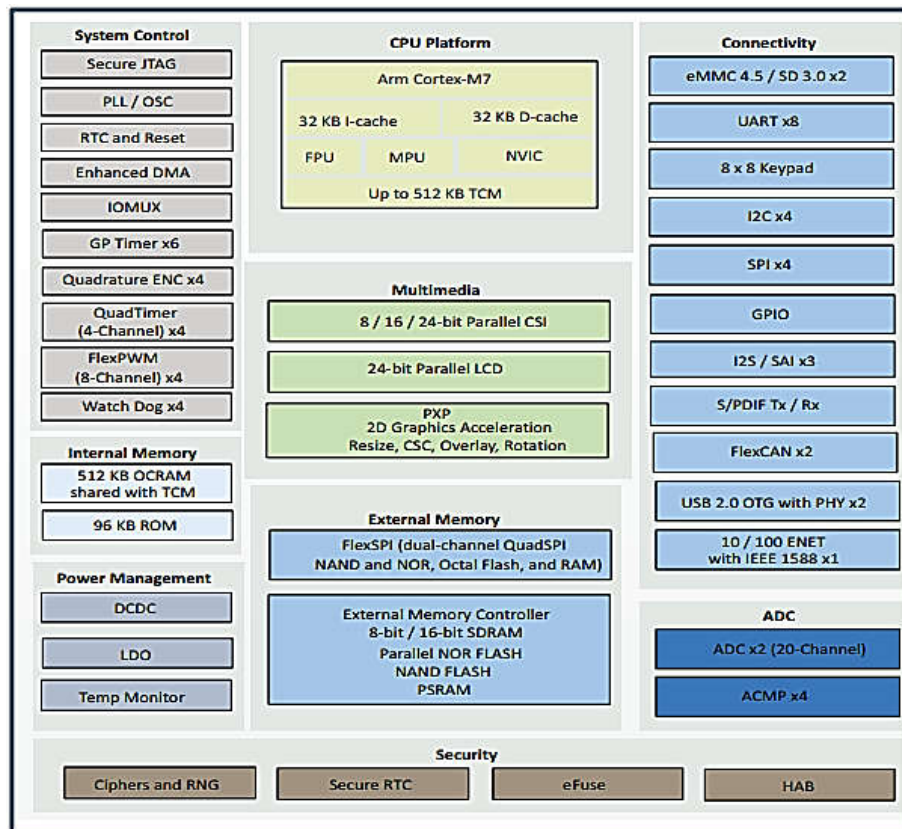
Parameter	Value
Core: Number of cores (SPEC)	1
Core Type	Arm Cortex-M7

**1(D)1): a central processing unit;**-For instance, the '437 Accused Products include a central processing unit.





*1(D)2): a real time clock;*-For instance, the '437 Accused Products include a real time clock.





## 1.1 Features

The i.MX RT1050 processors are based on Arm Cortex-M7 Core™ Platform, which has the following features:

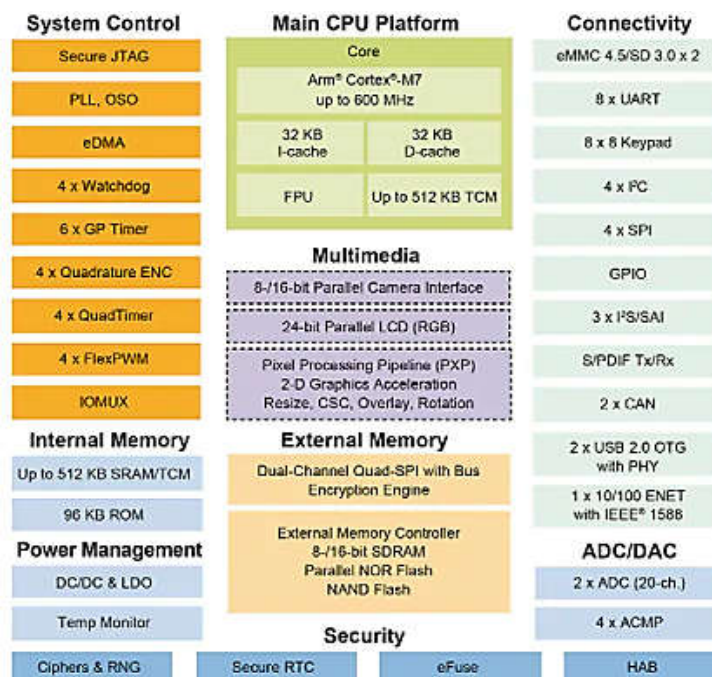
Secure Non-Volatile Storage (SNVS)

— Secure real-time clock (RTC)

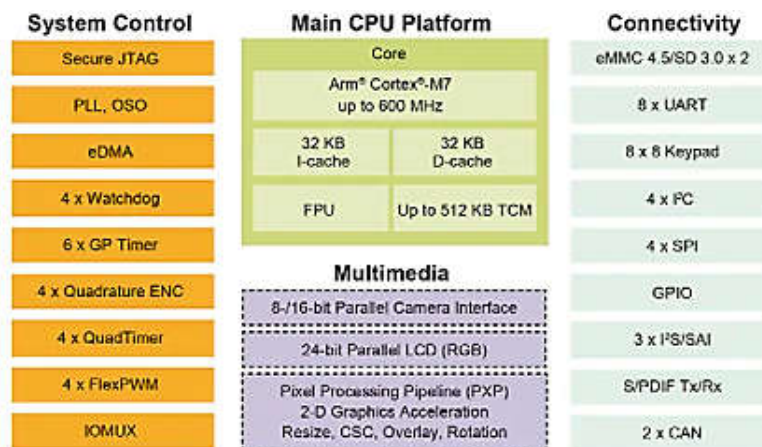
*1(D)3): a memory coupled to said central processing unit for storing a central control program and data, said data including at least one of the values of the environmental conditions sensed by the environmental sensors; and;* -For instance, the '437 Accused Products have memory coupled to the CPU. The setting such as priority (central program) and sensor data values are stored in the memory of the thermostat.

## Operating Features

Parameter	Value
Core: Number of cores (SPEC)	1
Core Type	Arm Cortex-M7
Operating Frequency [Max] (MHz)	528
SRAM (kB)	512



**1(D)4):** *an input/output unit coupled to the central processing unit, to the space conditioning equipment for issuing control signals thereto, and to a reception interface adapted to receive signals representing environmental conditions at a remote sensor;* For instance, the '437 Accused Products include a processor such as the MIMXRT1052CVL5B processor in the thermostat which have I/O modules. The I/O modules are coupled with the processor. The thermostat receives the temperature signals and controls the heating or cooling systems.



**Table 2. I.MX RT1050 modules list (continued)**

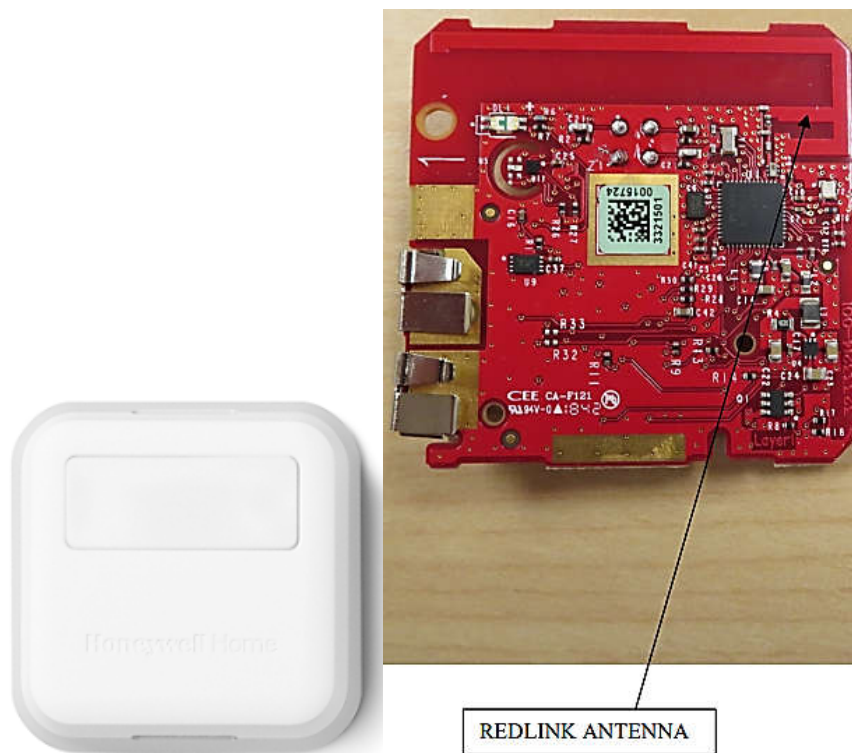
Block Mnemonic	Block Name	Subsystem	Brief Description
GPIO1 GPIO2 GPIO3 GPIO4 GPIO5	General Purpose I/O Modules	System Control Peripherals	Used for general purpose input/output to external ICs. Each GPIO module supports up to 32 bits of I/O.

## Dehumidification

The thermostat reads the indoor humidity level and allows the user to set a dehumidification setting. The thermostat controls the humidity level using the cooling system or a whole house dehumidifier.

**1(E):** *a remote processor for each of the remote sensors including a central processing*

*unit, a real time clock, a memory coupled to said central processing unit for storing a transmission control program, and an input/output unit coupled to the central processing unit and to a transmissions interface adapted to send to the central control device signals representing environmental conditions from a coupled environmental sensor; and;* For instance, the '437 Accused Products have remote sensors which are equipped with a processor. The processor is coupled with an antenna in the sensor using I/Os. The wireless sensor sends the temperature values to the thermostat using antenna.



## 2-PACK T10 REDLINK® ROOM SENSOR

C7189R2002-2/U

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The RedLINK® Room Sensors work with the Honeywell Home T10 Smart Thermostat. The sensors have a 200-foot range that detects indoor temperature, humidity and motion and transmit back to the thermostat to deliver reliable, whole-home comfort.

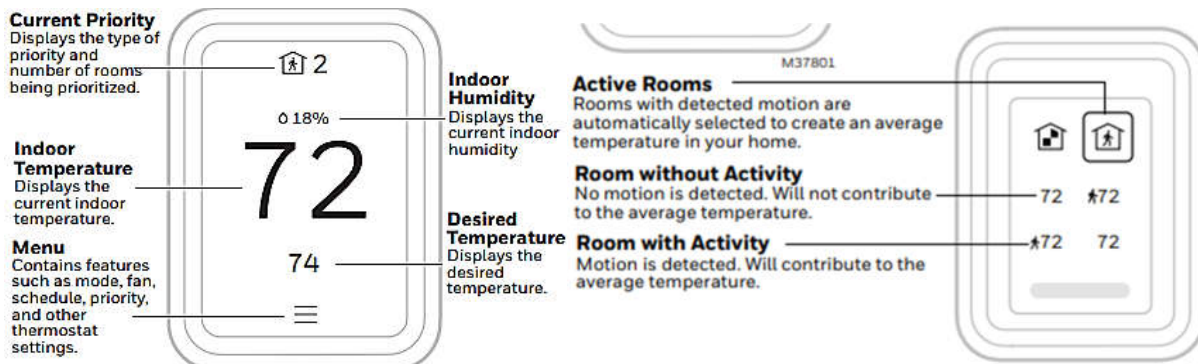
***1(F): for the central control device or remote sensors having environmental sensors and occupancy sensors, their input/output units further including a sensor input coupled to an environmental sensor and an occupancy input coupled to an occupancy sensor; -*** For instance, the '437 Accused Products include remote temperature sensor and occupancy detectors. The thermostat also receives the detected temperature and motion information from the sensor.

## 2-PACK T10 REDLINK® ROOM SENSOR

C7189R2002-2/U

Powerful Sensors. Whole-Home Comfort.

The RedLINK® Room Sensors work with the Honeywell Home T10 Smart Thermostat. The sensors have a 200-foot range that detects indoor temperature, humidity and motion and transmit back to the thermostat to deliver reliable, whole-home comfort.





**Whole-Home Range**

With a 200-foot range, 20 sensors with temperature, humidity, and occupancy detection can connect to your thermostat from throughout your home.

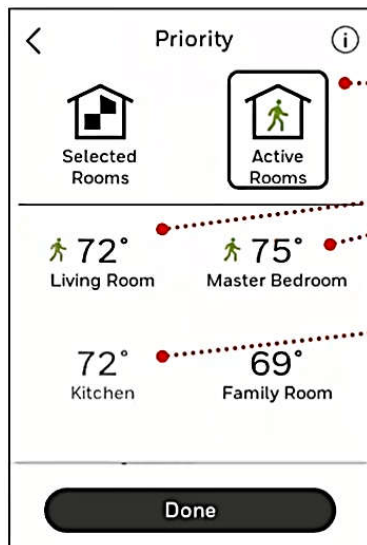
*1(G): the control programs causing a coupled central processing unit to selectively;* - For instance, the '437 Accused Products are equipped with the MIMXRT1052CVL5B application processor and facilitates a user for controlling temperature using the 'Priority' feature.

**Using Priority**

Priority creates an average temperature in your home based on specific rooms. This allows you to prioritize comfort where you want it.

**Active rooms**

When set to "Active rooms" the thermostat controls temperature based on the reading from the indoor sensors that detect motion.

**Active Rooms**

On T10 display or Honeywell Home App, when the category "Active Rooms" is chosen, only sensors that detect motion are used as part of the temperature average.

In this example, motion is detected in the living room and master bedroom only, so the thermostat would take an average temperature reading from those two sensors and ignore the temperature in the kitchen and family room.

**Note:** When "active rooms" is selected, the room the thermostat is in will be shown in grey since that room does not have a motion sensor.

*1(G)1): detect occupancy or vacancy of a nearby space from signals from a coupled occupancy sensor;* - For instance, the '437 Accused Products include a priority feature which uses the remote sensor to detect active rooms using its PIR detectors based on the occupancy and motion in the corresponding rooms.

**Q: When using active rooms, how long are those rooms considered after motion has last been detected?**

A: The sensor has a dynamic occupancy algorithm based on how many motion events it sees within a certain timeframe. If someone walks through a room, then the room will be occupied for 10 minutes. If someone is in a room longer, then the timeout will be increased automatically.

**Q: How do the wireless indoor sensors detect motion.**

A: The sensors use a Passive Infrared Sensor (PIR) detector.

**Active rooms**

When set to "Active rooms" the thermostat controls temperature based on the reading from the indoor sensors that detect motion.

*1(G)2): read current signals from a coupled environmental sensor and transmit them for storage in the memory of the central control device only if occupancy is detected;* For instance, the '437 Accused Products include a Priority feature, which uses the remote sensors to detect occupancy in a room, i.e., active room, the remote sensor sends the temperature reading of that room to the T10 Pro thermostat.

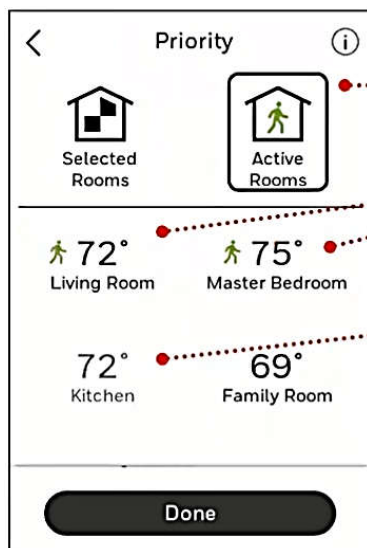
**Active rooms**

When set to "Active rooms" the thermostat controls temperature based on the reading from the indoor sensors that detect motion.

Powerful Sensors. Whole-Home Comfort.

The RedLINK® Room Sensors work with the Honeywell Home T10 Smart Thermostat. The sensors have a 200-foot range that detects indoor temperature, humidity and motion and transmit back to the thermostat to deliver reliable, whole-home comfort.





#### Active Rooms

On T10 display or Honeywell Home App, when the category "Active Rooms" is chosen, only sensors that detect motion are used as part of the temperature average.

In this example, motion is detected in the living room and master bedroom only, so the thermostat would take an average temperature reading from those two sensors and ignore the temperature in the kitchen and family room.

**Note:** When "active rooms" is selected, the room the thermostat is in will be shown in grey since that room does not have a motion sensor.

*1(G)3): for the central control program, calculate an average of the received environmental sensor values and use the average result as a control value which is compared with a setpoint stored in the memory of the central control program to determine actuation of the space conditioning equipment.* For instance, the '437 Accused Products include a Priority feature which calculates an average of the received temperature readings from the various sensors in the active rooms. The thermostat treats the average value as the effective indoor temperature and displays the temperature in the middle of thermostat's screen. A user can configure a setpoint temperature value using a schedule setting and the settings are stored in the memory of the thermostat.

#### Schedule override on Device

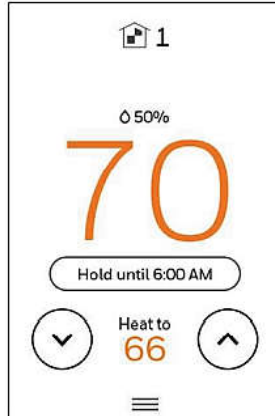
With thermostat in heat, cool, auto, or em heat mode, press the up or down arrow to change the setpoint. (if thermostat is in auto mode, you need to press "heat to" or "cool to" first).

## Using Priority

Priority creates an average temperature in your home based on specific rooms. This allows you to prioritize comfort where you want it.

#### Active rooms

When set to "Active rooms" the thermostat controls temperature based on the reading from the indoor sensors that detect motion.



**Q: How does motion-based priority work with multiple people in the house?**

A: If the thermostat priority setting is set to 'Active Rooms', then any room that detects motion will become prioritized, and those Rooms' temperatures will be averaged together to be used as the effective indoor temperature. If people leave the room, then the sensor will need to wait for the timeout.

130. At least as early as of the date of the filing of the Complaint, Defendant has had actual knowledge of the '437 Patent.

131. Additionally, Defendant contributorily infringes at least one or more claims of the '437 Patent by providing the Accused Products and/or software components thereof, that embody a material part of the claimed inventions of the '437 Patent, that are known by Defendant to be specially made or adapted for use in an infringing manner and are not staple articles with substantial non-infringing uses. The '437 Accused Products are specially designed to infringe at least one or more claims of the '437 Patent, and their accused components have no substantial non-infringing uses. In particular, on information and belief, the software modules and code that implement and perform the infringing functionalities identified above are specially made and adapted to carry out said functionality and do not have any substantial non-infringing uses.

132. At least as early as the filing and/or service of this Complaint, Defendant's infringement of the '437 Patent was and continues to be willful and deliberate, entitling Rosen to enhanced damages.

133. Additional allegations regarding Defendant's knowledge of the '437 Patent and

willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

134. Defendant's infringement of the '437 Patent is exceptional and entitles Rosen to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

135. Rosen is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '437 Patent.

136. Rosen is entitled to recover from Defendant all damages that Rosen has sustained as a result of Defendant's infringement of the '437 Patent, including, without limitation, a reasonable royalty.

#### **PRAYER FOR RELIEF**

WHEREFORE, Rosen respectfully requests:

A. That Judgment be entered that Defendant has infringed at least one or more claims of each of the Asserted Patents, directly and/or indirectly, literally and/or under the doctrine of equivalents;

B. An award of damages sufficient to compensate Rosen for Defendant's infringement under 35 U.S.C. § 284, including an enhancement of damages on account of Defendant's willful infringement;

C. That the case be found exceptional under 35 U.S.C. § 285 and that Rosen be awarded its reasonable attorneys' fees;

D. Costs and expenses in this action;

E. An award of prejudgment and post-judgment interest; and

F. Such other and further relief as the Court may deem just and proper.

**DEMAND FOR JURY TRIAL**

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Rosen respectfully demands a trial by jury on all issues triable by jury.

Respectfully submitted,

Dated: February 6, 2022

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